Cynllun Datblygu Lleol Newydd Cyngnor Bwrdeistref Sirol Merthyr Tudful (2016-2031)
Merthyr Tydfil County Borough Council Replacement Local Development Plan (2016 – 2031)

Cynllun Adnau | Deposit Plan
Adroddiad Craffu Asesu | Habitats Regulations Rheoliadau| Assessment (HRA)
Cynefinoedd (ARhC) | Screening Report

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Cyngor Bwrdeistref Sirol
MERTHYR TUDFUL
MERTHYR TYDFIL
County Borough Council

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EXECUTIVE SUMMARY

0.1 This Screening Report for a Habitats Regulations Assessment (HRA) is required by the Habitats Directive (92/43/ECC) as set out in the Conservation of Habitats and Species Regulations 2010. It considers the potential for the Merthyr Tydfil County Borough Council Deposit Replacement Local Development Plan (LDP) (2016 – 2031) to adversely affect the integrity of any Natura 2000 / European Sites which comprise:

- Special Areas of Conservation (SAC) and candidate SACs (cSACs);
- Special Protection Areas (SPA) and potential SPAs (pSPAs) and
- European Ramsar sites.

0.2 Given that there are no European Sites within Merthyr Tydfil County Borough area the Preferred Strategy (PS) screening assessment[1] focused on the likelihood of significant impact on the ten European Sites within 15km of the area, namely, Aberbargoed Grasslands, Blaen Cynon, Brecon Beacons, Cardiff Beech Woods, Coedydd Nedd a Mellte, Cwm Cadlan, Cwm Clydach Woodlands, Llangorse Lake, River Usk and Usk Bat Sites.

0.3 The assessment concluded that the PS for the Merthyr Tydfil County Borough Council Replacement LDP was not likely to adversely affect the integrity of any Natura 2000 sites, subject to investigations on the following matters:

1. All development allocations in the Deposit plan must avoid the loss and or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.

2. Emissions from new industrial development on protected and allocated industrial sites in the Deposit Plan must not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake/Llyn Syfaddan SAC.

0.4 This HRA has therefore been re-run for the Deposit Plan focussing on the above matters only. Other matters screened out at PS stage can be found in the PS HRA Screening Report.

0.5 The Deposit Plan Screening Report has concluded that the LDP is not likely to significantly adversely affect the integrity of any Natura 2000/European Sites either alone, and given the absence of direct affects, or 'in-combination' with other plans, projects and programmes considered in the light of all available evidence.

[1] Habitats Assessment Screening Report, July 2017

1. INTRODUCTION

1.1 This report forms part of a series of Deposit documents prepared by Merthyr Tydfil County Borough Council (MTCBC) to inform the Merthyr Tydfil County Borough Council Replacement Local Development Plan (2016 – 2031).

1.2 In line with the requirements of the Habitats Directive (92/43/ECC) (European Economic Community, 1992), as out set by the Conservation of Habitats and Species Regulations 2010) (UK Government, 2010), known as the Habitats Regulations, it constitutes the Habitats Regulations Assessment (HRA) of the Deposit Plan.

1.3 HRA is also commonly referred to as Appropriate Assessment (AA), although the requirement for AA is first determined by an initial 'screening' stage undertaken as part of the full HRA. This report addresses a re-run of the Screening Phase of the HRA, by assessing the likely significant effects on designated European Sites, within 15km of the County Borough area, of implementing the Deposit Plan's policies and proposals where they relate to:

1. Development allocations that may have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC) and

2. Emissions from new industrial development on protected and allocated industrial sites that have the potential to directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC and Llangorse Lake/Llyn Syfaddan SAC.

1.4 For the purposes of this report 'European Sites' comprise:

- Special Areas of Conservation (SAC) and candidate SACs (cSACs) [designated under the Habitats Directive 1992 (European Economic Community, 1992)];

- Special Protection Areas (SPA) and potential SPAs (pSPAs), [classified under the EC Wild Birds Directive 1979 (European Economic Community, 1979) as amended by the Birds Directive (European Commission, 2009) and

- Ramsar sites[2] [Designated under the Convention on Wetlands of International Importance 1971, as amended (Ramsar Convention Secretariat, 1971).

[2] The Convention on Wetlands (Ramsar, Iran 1971), known as the Ramsar Convention, is an intergovernmental treaty that provides the framework for national action and international co-operation for the conservation and wise use of wetlands and their resources.

2. REQUIREMENTS FOR HABITATS REGULATIONS APPRAISAL

2.1 In 2011, in line with the international commitments adopted at the Convention on Biological Diversity held in Nagoya, Japan in 2010, the European Union (EU) adopted a new Biodiversity Strategy which set the following headline target:

> *"Halting the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restoring them in so far as feasible, while stepping up the EU contribution to averting global biodiversity loss"* (European Commission, 2011)."

2.2 The EC Directive 1992/43/EEC (European Economic Community, 1992) on Conservation of Natural Habitats and of Wild Fauna and Flora or "Habitats Directive" and Directive 2009/147/EC (European Commission, 2009) on the Conservation of Wild Birds or "Birds Directive," sometimes jointly called "Nature Directives," form the cornerstones of the EU's biodiversity policy.

2.3 The Habitat Directive establishes a network of internally important sites designated for their ecological status, known as SACs, whilst the Birds Directive establishes a network of the most suitable territories for the conservation of naturally occurring populations of wild bird species, known as SPAs.

2.4 Sites designated under the Nature Directives are referred to as Natura 2000 (N2K) Network (European Union, 2000). The Natura network is the largest co-ordinated network of protected areas in the world, offering a haven to Europe's most valuable and threatened species and habitats. It focuses on a sub-set of around 2000 animal and plant species (out of the hundreds of thousands present in Europe) which are in need of protection to either prevent their extinction or enable their long-term survival.

2.5 Article 6(3) and 6 (4) of the Habitats Directive introduces the requirement for AA to be undertaken on proposed plans and projects, which are not necessary for the management of the site, but which are likely to have a significant effect on one or more European sites either individually or in-combination with other plans or projects.

Article 6(3) states:

> *"Any plan or project not directly connected with or necessary to the management of the site but likely to have a significant effect thereon, either individually or in combination with other plans or projects, shall be subject to appropriate assessment of its implications for the site in view of the site's conservation objectives. In the light of the conclusions of the assessment of the implications for the site and subject to the provisions of paragraph 4, the competent national authorities shall agree to the plan or project only after having*

ascertained that it will not adversely affect the integrity of the site concerned and, if appropriate, after having obtained the opinion of the general public".

2.6 This requirement is set out in the 2010 regulations, which require the application of HRA to all land-use plans. In addition as a matter Welsh Government (WG) policy:

- Ramsar sites are to be treated as if they are '**European site**s' for the purpose of considering development proposals that may affect them and included within HRA/AA and

- cSACs and pSPAs are to be treated as '**designated sites**' in the context of the HRA.

2.7 An HRA/AA must have complete, precise and definitive findings and conclusions capable of removing all reasonable scientific doubt as to the effects of the works proposed on the European Sites concerned. Such findings and conclusions are essential in order that a competent authority might gain the necessary level of certainty to take the decision to authorise the works. In addition it should be noted that:

- Protective measures aimed at compensating for the negative effects on a Natura 2000 site cannot be taken into account in the assessment and

- Assessments carried out pursuant to the EIA Directive or SEA Directive cannot replace the procedure provided for in Article 6(3) and (4) of the Habitats Directive.

3. THE LOCAL DEVELOPMENT PLAN

3.1 Annex 6 'The Appraisal of Development Plans in Wales under the provisions of the Habitats Regulations,' of Technical Advice Note 5: Nature Conservation and Planning, Guidance (Welsh Government , 2009), provides guidance for HRAs. The former Countryside Council for Wales (CCW) also provided draft guidance (Countrysdie Council for Wales, 2009 revised 2010) to assist LPAs to comply with Habitats Directive compliance.

3.2 The HRA/AA must precede approval of the LDP and take into account the likely significant cumulative effects, which result from the combination of the plan (i.e. in-combination), with other plans or projects against the conservation objectives of a European Site.

3.3 It should ascertain whether the LDP would adversely affect the integrity[3] of a European site (In order for the integrity of a site as a natural habitat not to be adversely affected the site needs to be preserved at a favourable conservation status[4]).

3.4 All the aspects of the LDP which can, either individually or in-combination with other plans or projects, affect the conservation objectives must be identified, in the light of the best scientific knowledge in the field.

3.5 In this case:

- Where significant effects cannot be excluded on the basis of objective information, an appropriate assessment must be undertaken. Having undertaken the assessment, where adverse effects on the integrity of the site are not ruled out, the competent authority must not approve the plan unless a determination of over-riding public interest is made;

- Where the conservation objectives of the site concerned are likely to be undermined, the plan must necessarily be considered likely to have a significant effect. Where significant effects are identified, alternative options for mitigation measures should be examined to avoid any potential damaging effects[5] and

[3] **Integrity** - the sites coherence, ecological structure and function across the whole area that enables it to sustain the habitat, complex of habitats and or/levels of populations of species for which it was classified.

[4] **Favourable Conservation Status** can be described as a situation where a species or habitat type is prospering (in both quality and extent/population) and has good prospects to do so in future as well.

[5] Member States are required to undertake positive management measures to ensure their populations are maintained at, or restored to, a favourable conservation status throughout their natural range within the EU.

- Where the LDP has an effect on that site but is not likely to undermine its conservation objectives, it cannot be considered likely to have a significant effect on the site concerned.

3.6 Although there are no European Sites present in the MTCBC administrative area, measures taken outside of a protected area[6], e.g. isolating sub-populations of a species found within a SAC by blocking communication corridors[7] or linking those sub-populations with other populations, known as "connectivity", in some cases have the potential to significantly disturb the population protected. Even a small-scale project can have significant effects[8] on the environment if it is in a location where the environmental factors, such as fauna and flora, soil, water, climate or cultural heritage, are sensitive to the slightest alteration.

3.7 In addition, the following measures apply across the species´ entire natural range and therefore apply both inside and outside of protected sites:

- Species protection provisions: establish a general system of strict protection for all wild bird species in the EU and for other endangered and valuable species listed in Annex IV of the Habitats Directive, as well as taking specific measures towards selected species from Annex V of the latter.

- Site designation and management measures: aimed at conserving core areas for those species listed in Annex I (and regularly occurring migratory species) of the Birds Directive and Annex II of the Habitats Directive as well as habitat types listed in Annex I of the Habitats Directive.

[6] The European Court of Justice has held that all natural habitats and habitats of species found within SACs are protected against acts liable to deteriorate them. (Case C-75/01, Commission v Luxembourg, paragraphs 41 - 45) (Commission of the European Communities, 2003).

[7] Producing a barrier effect

[8] Measures must be taken to avoid man-caused impairment and disturbance and natural developments (e.g. natural succession) that may cause the status of species and habitats in SACs to deteriorate.

4. THE DEPOSIT PLAN

4.1 The MTCBC replacement LDP will provide the framework for the future development of the County Borough up to 2031 and will replace the extant Merthyr Tydfil LDP 2006 -2021. Before the Deposit Plan was finalised, the opportunity was taken to consult on the broad structure and the key policies contained within the Preferred Strategy (PS). At this stage, the 'deposit' stage it has been the case of refining and supplementing the earlier work of the PS which was prepared as a means of seeking consensus on the amount and distribution of population growth and economic growth.

4.2 In accordance with 'the LDP regulations' contained within The Town and Country Planning (Local Development Plan) (Wales) Regulations 2005 S.I.2005/2839(W.203 and the latest edition of Planning Policy Wales (PPW) the Council has prepared a Deposit Plan, which includes the following elements:

- Title & sub-title: including the expiry date of the plan period;
- Introduction: setting the context for the plan period; issues to be addressed, objectives and means of promoting sustainability;
- Strategy: including a Vision, strategic issues, key aims, objectives, policies, broad locations for development, the proposed level of change, key targets and spatial interpretation of the strategy Illustrated on a diagrammatic map;
- Area-wide policies: generic and topic based setting out criteria against which planning applications will be considered, but not repeating national policy;
- Site allocations: for both development and restraint;
- Area specific policies and proposals: for key areas of change or protection;
- Reasoned justification: to explain and guide policies;
- Proposals and Constraints maps: illustrating policies, proposals and constraints to development with a spatial component and
- Monitoring framework: comprised of targets and indicators.

4.3 The Deposit Plan sets out the approach that the LDP intends to take in order to ensure that the County Borough is developed in a sustainable manner. It sets out the main issues to be addressed in Merthyr Tydfil and proposes a vision and 18 LDP objectives for tackling the issues. In line with the Well-being of Future Generations (Wales) Act 2015 the LDP objectives are broadly grouped by their contribution to Social, Cultural, Environmental and Economic well-being.

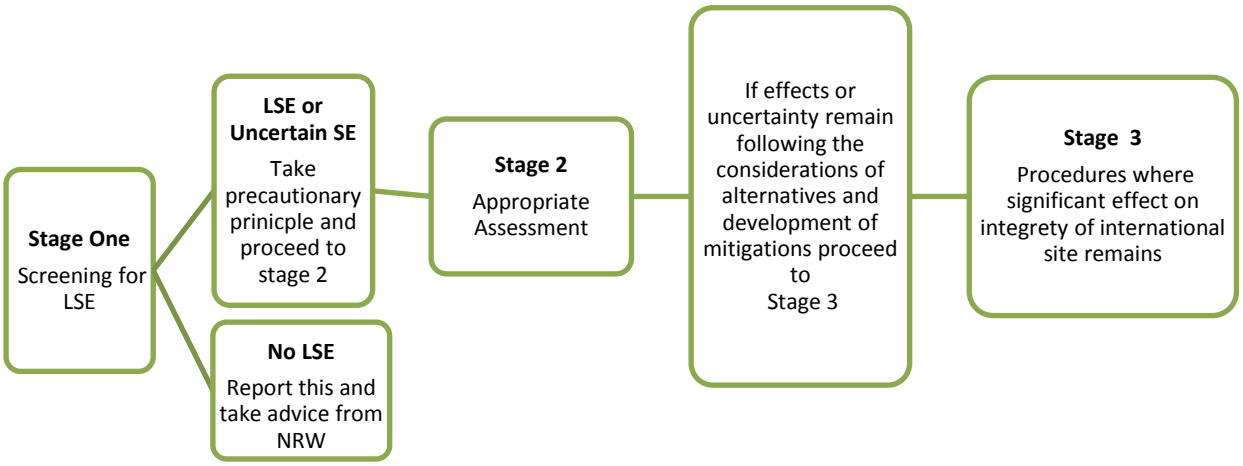
4.4 The Deposit Plan sets out the growth and spatial strategies to achieve the objectives. Most significantly, it seeks to address a projected population decline in the County Borough by encouraging a sustainable level of population growth and to facilitate this it is estimated that 2,250 new homes need to be built by 2031.

4.5 Development will be primarily directed to the main settlement of Merthyr Tydfil, the 'Primary Growth Area' where there is greater capacity for regeneration and development than elsewhere in the County Borough. The 'Hoover Strategic Regeneration Area' is proposed at Abercanaid/Pentrebach to deliver a significant proportion of new homes (up to 440 homes). Other smaller sites are distributed throughout the Primary Growth Area and 'Other Growth Area' situated within existing urban areas in the lower valley area of the County Borough.

4.6 The Deposit Plan also contains polices and proposals to address the 18 specific objectives. These set out the spatial strategy for the development and use of land in greater detail both County Borough wide and area specific and support the protection and management of the historic environment and natural environments. In particular, Policies SW3, SW6, SW8, SW12, and EcW4 allocate specific land for development proposals and policies EcW1 and EcW2 seek to protect and allocate industrial sites within the Plan area. In addition, Policy CW2 has been identified as the 'Cyfarthfa Heritage Area' to support the development of a heritage based visitor attraction to complement the offer of Cyfarthfa Castle and Park.

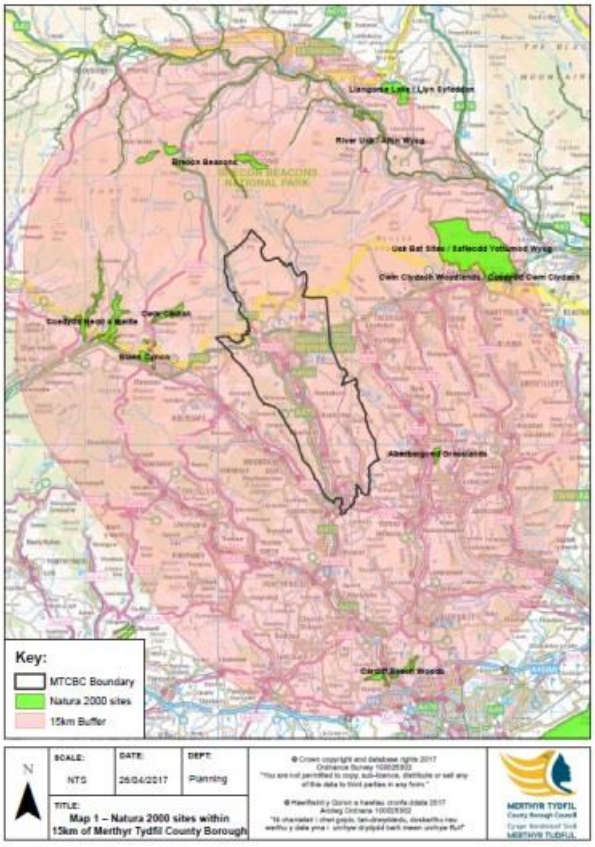
5. METHOD

5.1 The method and approach used for screening are based on formal Welsh Government Guidance and emergent practise, which recommends that the HRA is approached in three main stages:



5.2 Map 1 below shows all Natura 2000 sites within 15km of Merthyr Tydfil County Borough Council.

Map 1 – Natura 2000 sites within 15km of Merthyr Tydfil County Borough



5.3 The key issues against which the Deposit Plan has been considered are relevant indirect impacts and impacts of relevant migratory qualifying species. Given that there are no Natura 2000 sites in the County Borough an assessment was made of the likelihood of the potential for the Deposit Plan to impact on each of the relevant European sites situated within 15km of the County Borough as shown below in Table 1.

TABLE 1: Natura 2000 sites potentially affected within 15km[9] of Merthyr Tydfil County Borough Council
LSE: Loss and degradation of marsh fritillary (migratory qualifying species) habitat (potentially supporting metapopulations[10])
Special Areas of Conservation (SAC)
Aberbargoed Grasslands
Blaen Cynon
LSE: Emissions (air pollution) from new and protected industrial development
Special Areas of Conservation (SAC)
Brecon Beacons
Coedydd Nedd a Mellte
Cwm Cadlan
Llangorse Lake / Llyn Syfaddan

5.4 The screening of the Deposit Plan (see Tables 2 and 3) identifies the above key issues against which the potential effect of the Deposit Plan has been assessed and takes into account other relevant issues as follows:

- Relevant **v**ulnerabilities identified in the conservation management objectives, which a land use plan could theoretically affect (Appendix 1);
- Other relevant LDP screening assessments taken account at of PS HRA stage (Appendix 2);
- Information on the migration relevant qualifying species (Appendix 3) and
- Other supporting information as referenced in Table 2, identified in Appendix 4.

5.5 The Deposit Plan has also been screened (as shown in Table 3) to identify, at a broad level, those policies and proposals which do not have the potential to affect Natura 2000 sites on the basis of the following criteria:

- The policy itself will not lead to development;

[9] Natural resources Wales advises 15Km as an appropriate distance for scoping purposes.

[10] **Metapopulation**-a group of populations that are separated by space but consist of the same species. These spatially separated populations interact as individual members move from one population to another

- The policy itself will have no effect because development is dependent on implementation of lower tier policies or proposals;
- The policy is unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.)
- The proposal or allocation included in this policy will not directly result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.);
- The proposal or allocation included in this policy will not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC;
- The policy seeks directly address the issue of the impact of new development on air pollution;
- The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas;
- The policy will steer development away from European sites and associated sensitive areas;
- The policy or proposal is intended to protect the natural environment, including biodiversity and
- The policy or proposal is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.

6. STAGE 1: SCREENING

TABLE 2: SCREENING 'APPROPRIATE ASSESSMENT' ON THE BASIS OF OBJECTIVE INFORMATION

KEY ISSUE: Marsh fritillary butterfly: Loss, degradation and management of habitat.

The UK Biodiversity Action Plan for the marsh fritillary (updated 2010) identifies sources of information on the species (Joint Nature Conservation Committee, 2010). The Marsh fritillary butterfly (*Euphydryas aurinia)* is found in a range of habitats in which its larval food plant, devil's-bit (*Scabious succisa pratensis*), occurs. Marsh fritillaries are essentially grassland butterflies in the UK, and although populations may occur occasionally on wet heath, bog margins and woodland clearings, most colonies are found in damp acidic or dry calcareous grasslands (including 6410 Molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion caeruleae*) and Semi-natural dry grasslands and scrubland (*Facies*) on calcareous substrates (*Festuco-brometalia*). The best scientist knowledge in the field can be found at http://jncc.defra.gov.uk/ speciespages/300.pdf

Populations of marsh fritillary vary greatly in size from year to year, and, at least in part, this is related to cycles of attack from parasitic wasps. Adults tend to be sedentary and remain in a series of linked meta-populations, forming numerous temporary sub-populations, which frequently die out and re-colonise.

Management in both wet and dry situations is predominantly by low-intensity cattle or pony grazing.

Sheep selectively graze devil's-bit (*Scabious*) and are therefore detrimental to marsh fritillary populations, except at very low stocking rates.

Burning and mowing are also known to have caused the extinction of populations.

Relevant SAC within 15km	Marsh fritillary butterfly: Loss, degradation and management of habitat.	
	Consideration based on objective information.	Conclusion
The Aberbargoed Grasslands SAC is situated approximately 4.5km to the south of the MTCBC administrative boundary. It covers an area of 42.5ha on a southwest facing	A management plan has been drawn up which states that it is essential that restoration management is undertaken at Aberbargoed Grasslands to improve the quality and quantity of habitat available to marsh fritillaries. This primarily needs to include the establishment of suitable grazing regime, scrub clearance and control of illegal burning. Natural Resources Wales (NRW) monitors the SAC together with Butterfly Conservation. The SAC supports the Hirwaun meta-population of marsh fritillary, the largest on the southern edge of the BBNP and one of the most important habitat networks for the Marsh fritillary in Wales.	Given that all development in the Deposit Plan avoids the loss or degradation of marsh fritillary habitat the Plan is unlikely to adversely affect the Aberbargoed

hillside in the Rhymney Valley; 1km east of Bargoed; occupying an urban fringe position, between 200m and 290m above sea level.	Although the Caerphilly County Borough Ecologist's considers that the occupied site situated in the MTCB area is probably functioning as part a network of sites which help support the Aberbargoed Grasslands SAC site, according to NRW, who monitor the species, "*In terms of the location of Merthyr's marsh fritillary in the wider landscape, they are much more closely linked to the Blaen Cynon SAC than this SAC. This is driven mainly by availability and location of suitable habitat in the landscape and also to a degree by topography.*[11]" The area where the marsh fritillary butterfly has been recorded within Merthyr Tydfil County Borough is considered to form part of the Upper Cynon Functional Landscape Area for the species. Habitat suitable for the marsh fritillary in Merthyr therefore plays an important role in the conservation of marsh fritillary in the wider landscape. **The Deposit Plan therefore directs no development within or in proximity to the habitat suitable for the marsh fritillary in Merthyr.**	Grasslands SAC and its population of marsh fritillary butterfly.
Relevant SAC within 15km	Marsh fritillary butterfly: Loss and management of habitat.	
	Consideration based on objective information	Conclusion
The Blaen Cynon SAC is situated approximately 5km to the north of the MTCBC administrative boundary and lies within the South Wales Coalfield on the fringes of an urban area.	Blaen Cynon SAC supports the Hirwaun meta-population of Marsh fritillary, the largest on the southern edge of the BBNP and one of the most important habitat networks for the Marsh fritillary in Wales. The SAC contains an extensive complex of damp pastures and heaths, comprising Cors Bryn-y- Gaer SSSI and the nearby Woodland Park and Pontpren SSSI both used by and supporting the Hirwaun meta-population. The SAC designation helps to control threats from housing, opencast or other industrial development and pollution arising from such development in the immediate vicinity. Parts of Woodland Park and Pontpren SSSI, notably units 3 and 4 have been subject to improvement in preparation for tree planting, including draining, planting with trees and use of fertiliser. These areas have a programme of scrub removal and cattle grazing in place, to restore the grassland to a condition where it can be used by marsh fritillaries (Devil's scabious requires low nutrient grassland). Some drains have been blocked, to restore the hydrology of the site.	Given that all development in the Deposit Plan avoids the loss or degradation of marsh fritillary habitat the Plan is unlikely to adversely affect the Blaen Cynon SAC and its population of marsh fritillary butterflies.

[11] Email received from NRW Conservation officer dated 09/09/2016

	According to Rhondda Cynon Taf County Borough Ecologist's, '*the issue of Blaen Cynon SAC is relevant for Merthyr- especially since you have an occupied marsh fritillary site in your County Borough, which is probably functioning as part a network of sites which help support that SAC site.*[12]' NRW monitors the SAC together with Butterfly Conservation. According to NRW "*in terms of the location of Merthyr's Marsh fritillary in the wider landscape, they are much more closely linked to the Blaen Cynon SAC than the Aberbargoed Grasslands SAC. This is driven mainly by availability and location of suitable habitat in the landscape and also to a degree by topography.*" As part of the National Transport Plan improvement projects across the heads of the valleys it is proposed to dual, sections 5 and 6 of the Heads of the Valleys Road, between Dowlais Top and Hirwaun during 2019-22. Assessment work carried out by Jacobs (Engineering Consultants) identified that a total of 11.4ha of Marsh fritillary breeding habitat would be lost through the scheme. The loss of such a significant area of habitat would likely impact on the SAC and the viability of the wider Hirwaun meta-population. Likely 'in combination' effects of this (and any unforeseen effects of the development) and other local developments, include increased fragmentation of breeding sites (resulting in poorer connectivity between them), increased chance of direct collisions between dispersing marsh fritillary and motor vehicles, changes to hydrology, and atmospheric pollution impacts on breeding habitat. Any compensation[13] required for the A465 works i.e. through the creation of new habitat areas is likely to be 100% within Rhondda Cynon Taf County Borough Council area. A465 Heads of the Valleys Section 2 Assessment of Implications (of highways and/or roads projects) on European sites (including Appropriate Assessment) (AIES) https://a465gilwern2brynmawr.files.wordpress.com/2014/02/a465-hov-s2_es_siaa.pdf	

[12] Email from RCT Ecologist dated 21/07/2016

[13] Butterfly Conservation considers that a minimum compensation requirement of 2:1 should be imposed in 'perpetuity,' (up to 25 years)

	The area where the marsh fritillary butterfly has been recorded within Merthyr Tydfil County Borough is considered to form part of the Upper Cynon Functional Landscape Area for the species. Habitat suitable for the marsh fritillary in Merthyr therefore plays an important role in the conservation of marsh fritillary in the wider landscape. **The Deposit Plan therefore directs no development within or in proximity to the habitat suitable for the marsh fritillary in Merthyr and It is therefore considered that there will be no 'in-combination' effects on the Blaen Cynon SAC.**	

KEY ISSUE: Emissions (Air Pollution) from industrial development

Critical loads for air pollutants are being exceeded. Development in and around Merthyr Tydfil has the potential to increase air pollution (through a combination of development [emissions from building stock] and a growth in road traffic [emissions from vehicles] including on the A456.

Background to air pollution (atmospheric deposition)

Much of this atmospheric pollution comes from distant, diffuse sources, such as traffic and domestic emissions, but some can be attributed to large point sources, such as major power stations or industrial processes. The concentration of atmospheric pollutants observed at different locations depends on more than just the quantity of pollutants emitted at the various sources. The atmosphere is the agent that transports and disperses pollutants between sources and receptors. Consequently, the state of the atmosphere helps to determine the concentrations of pollutants observed at receptors (DEFRA, 2015), (DEFRA)

Unlike emissions sources, which can be controlled, the state of the atmosphere is not at present susceptible to human control. In general, three parameters are used to describe atmospheric transport and dispersion processes. These are wind speed, wind direction, and atmospheric stability. For emissions at a given source, a higher wind speed provides the pollutants with a greater air volume within which to disperse. This causes ground level pollutant concentrations, other things being equal, to be inversely proportional to wind speed. Horizontally, the wind direction is the strongest factor affecting pollutant concentrations. For a given wind direction, nearly all the pollutant transport and dispersion will be downwind. Wind direction determines which sector of the area surrounding a source will receive pollutants from that source.

Atmospheric stability directly affects the vertical dispersion of atmospheric pollutants. Unlike wind direction and wind speed, atmospheric stability cannot be measured directly. Atmospheric stability is a measure of air turbulence and may be defined in terms of the vertical atmospheric temperature profile. When the temperature decreases rapidly with height, vertical motions in the atmosphere are enhanced, and the atmosphere is called unstable. An unstable atmosphere, with its enhanced vertical motions, is more effective for dispersing pollutants, and because of the large volume of air available for the spread of pollutants, ground-level concentrations can be relatively low. When the temperature does not decrease

rapidly with height, vertical motions are neither enhanced nor repressed and the stability is described as neutral. Under these conditions, pollutants are also allowed to disperse vertically in the atmosphere, although not as rapidly as when it is unstable.

When the temperature decreases very little, remains the same, or increases with increasing height, the atmosphere is called stable. Under these conditions, the atmosphere inhibits the upward spread of pollutants. Upward-moving smoke, which rapidly assumes the temperature of the surrounding air, reaches a point where it is colder, and hence denser, than the air above it, so it can rise no further. This suppression of upward motion effectively forms a lid beneath which pollutants can disperse freely. The weaker the temperature decrease with height, the higher the lid is. The extreme case is an inversion, when the temperature increases with height. Often, clouds are topped by a stable or inversion layer, which stops their vertical growth. This wind rose is a set of tables, one for each stability class (ranging from very stable to very unstable), listing the frequency of occurrence of all possible combinations of wind speed and wind direction[14].

Mountains and valleys have characteristic airflow patterns, too. In the evening, as the earth cools, the coldest air will sink into the lowest part of the valley. This creates a stable inversion layer because lighter, warmer air stays above the valley. In this way, pollutants are trapped in the valleys all night. During the daytime when heating occurs, the air in the valley is warmed and rises, permitting the pollutants to escape. Unfortunately, this heating and upward motion does not always occur. During periods when high pressure settles over a region and the air is stagnant, the atmosphere is stable all day long, and pollutants continue to accumulate in the valley.

In towns, buildings form the topography. Where rows of tall buildings front on narrow streets the air flows through the streets as though they were canyons. Since ventilation is determined by building configuration, many distortions in wind, and hence pollution flows, take place in a city. Air flows over a building and into a street downwind of it. The building, because the air cannot flow through it, creates an obstruction in the pattern of the smooth airflow. Downwind of the building, an eddy, or circular movement of air at variance with the main airflow, is formed in its wake. The eddy can trap pollutants emitted by cars in the street, and can cause concentrations of pollutants, for example, carbon monoxide, to be as much as three times higher on the side of the street further downwind than at the site of pollutant origin.

The well-mixed layer beneath a stable layer is called the mixing layer. When it extends to the ground its vertical extent is known as the mixing height or the mixing depth. Generally, turbulence is enhanced in the early morning hours as the sun heats the ground and temperature decreases with height, causing unstable conditions. At night, as the earth cools, temperature increases with height causing less turbulence and stable atmospheric conditions. Wind speed, wind direction, and atmospheric stability will vary greatly with time. For a certain location, some combinations occur more frequently than others. Where detailed meteorological records have been kept for a year or more, a stability wind rose can be calculated.

[14] It should be noted that topographical features such as mountains, hills, valleys, bodies of water, buildings, and other terrain features can change airflow patterns, resulting in unexpected pollution effects

Relevant SAC within 15km	Air Pollution	
	Consideration based on objective information.	Conclusion
The Brecon Beacons SAC is situated approximately 3km north of the MTCBC administrative boundary.	A Report of a Health Impact Assessment Study of an Opencast Scheme at Ffos-Y-Fran, Merthyr Tydfil (Group, Ffos-y-Fran Health Impact Asessment Steering, 2007) cites useful sources of information on local wind conditions. Information from lay local weather studies was presented and considered at the Public Inquiry and in the Air Quality Statement of Evidence (2004) but some of this information is also presented in this report alongside other supporting data. Meteorological data was collected at the Cwmbargoed Weather Station between 1967 and 1986. Wind roses showing the direction of prevailing winds on an annual basis for periods between 1967 and 1986 have been presented in a number of publications (Our Changeable Weather, 1986; Merthyr Tydfil: A valley community, 1981; and, Living in the Clouds, 1986) and show that wind in this location can come from several different directions over a twelve month period, and especially over much longer periods of time. Studies carried out by Josh Powell (a resident of Merthyr Tydfil) show that average wind direction for the period 1967-1980 came from the north west for 60 days, west for 65-70 days but south west for only 35 days over this period. The wind also came from a north easterly direction for just over 40 days of the year, more frequently than from a south westerly direction (35 days).A further study of air quality was carried out by the former Environment Agency at a car-park adjacent to Dowlais Rugby Club. It provides valuable data on wind speed and direction relevant to this area. From data collected a wind rose was produced which displays aggregated data for a four month period, 17 December 2002-14 April 2003. This shows that the strongest winds during these winter months were from the west south west and south west. Mean wind speeds and gusts are stated as strongest during the winter half of the year and as coming from the south west and south-south west. This Agency study also examined wind direction and shows a much greater frequency of wind coming from a northerly direction than previous studies, but at slightly less strength (5-7 m/s). Indeed, at this location during this period the prevailing wind was east north east	The Deposit LDP Preferred Strategy is unlikely to adversely affect the Brecon Beacons SAC through air pollution (industrial emissions).
The Cwm Cadlan SAC is situated approximately 4km north west of the MTCBC administrative boundary, approximately 1km north-east of the village of Penderyn and about 4km north of Hirwaun, near Aberdare.		The Deposit LDP is unlikely to adversely affect the Cwm Cadlan SAC through air pollution (industrial emissions).
The Coedydd Nedd a Mellte SAC is situated approximately 7.5km from MTCBC with the most direct access to the site being via the A465.		The Deposit LDP is unlikely to adversely affect Coedydd Nedd a Mellte SAC through air pollution (industrial emissions).

The Llangorse Lake / Llyn Syfaddan SAC is situated approximately 14.8km from the MTCBC administrative boundary and is a large shallow lake lying in a natural depression of the Old Sandstone drift.	NRW states that the topography of an area dominates wind direction and that Merthyr Tydfil is at the head of a deep valley. The prevailing wind direction of 'east north east' in the study carried out adjacent to Dowlais Rugby Club in 2003 means that wind coming from the south west is being channelled by a valley (EAW representative, interview, 13/10/06). Given the location of the European sites proximate to the County Borough, the prevailing wind direction and the significant variables impacting Air Pollution, impacts from the LDP on the Llangorse Lake/ Llyn Syfaddan SAC are unlikely to be significant. Brecon Beacons National Park Local Planning Authority undertook an appropriate assessment of its LDP. The site management plan identifies the main source of pollution as the air. However, the potential for significant effects, alone and in combination with other plans and programmes was ruled out. **Given that airborne pollution is a key issue for air quality impacts arising from industrial development, specific allocations and proposals in the deposit Plan have been assessed in detail (see Table 3) which concludes that the Deposit Plan will not give rise to likely significant effects.**	The Deposit LDP is unlikely to adversely affect the Llangorse Lake SAC through air pollution (industrial emissions).

TABLE 3: SCREENING OF THE DEPOSIT PLAN

Key issues to consider:

1. The loss and or degradation of marsh fritillary habitat.

2. Emissions from new industrial development on protected and allocated industrial .

Preferred Policy Approaches	Description of Likely Effect	Potential Effect
Deposit Plan Vision		
To strengthen Merthyr Tydfil's position as the regional centre for the Heads of the Valleys within the Cardiff Capital Region, to encourage a sustainable level of population growth and be a place to be proud of where: • **People learn and develop skills to fulfil their ambitions;** • **People live, work, have a safe, healthy and fulfilled life; and** • **People visit, enjoy and return.**	*Sets overarching framework for development*	Issues addressed as part of the Deposit Plan policy screening below.
Deposit Plan Objectives		
1 **To encourage a sustainable level and distribution of population growth.** 2 **To promote use of the Welsh language and Culture.** 3 **To ensure the sufficient provision of land for the delivery of a range and choice of housing and affordable housing to address local housing needs.** 4 **To promote suitable previously developed land and the continued regeneration of local communities.** 5 **To ensure that community infrastructure and open space is supports the regeneration of local communities.** 6 **To promote high quality, sustainable and inclusive design and support measures which mitigate the predicted effects of climate change.** 7 **To support an integrated transport system, promote active travel and ensure new developments are accessible by walking, cycling and public transport links.** 8 **To support existing community facilities and suitable community led development.** 9 **To protect, enhance and promote all heritage, historic and cultural assets.** 10 **To improve ecosystem resilience and connectivity and which support habitats and species of principle importance.**	*Sets strategic framework for development*	Issues addressed as part of the Deposit Plan screening below.

11 To protect and enhance the character and appearance of the landscape and the countryside. **12 To provide and safeguard appropriate land for economic and skills development.** **13 To strengthen and diversify the rural economy.** **14 To develop the town and local centres as accessible, attractive, viable and vibrant places.** **15 To support suitable tourism, leisure and recreation developments and encourage an all year round tourism industry** **16 To promote renewable and low carbon energy.** **17 To ensure a sustainable supply of minerals.** **18 To promote the efficient use of materials and resources and ensure an integrated network of waste management facilities.**		
Summary of policies		
Policy SW 1: Provision of new homes. **To sustainably grow our population, 2250 additional homes are required. To ensure these are delivered, provision is made for 2825 additional homes.** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies.	♣ Potential effects arising from a growth in housing development are increased air pollutants from development and a growth in traffic movements. ♣ Policies SW11 & SW12 and EnW4, seek to reduce the emissions through improved design, more sustainable transport which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None
Policy SW 2: Provision of affordable housing. **During the plan period, the Local Development Plan will make provision for up to 261 affordable dwellings across the County Borough in order to contribute to the identified level of housing need.**	The policy does not explicitly involve development.	None

<table>
<tr>
<td>Screening:

• The policy itself will not lead to development.</td>
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<tr>
<td>Policy SW3: Sustainably distributing new homes.

New homes will be concentrated within the main settlement of Merthyr Tydfil (Primary Growth Area). A significant proportion of these (circa 800) will be delivered within the 'Hoover Strategic Regeneration Area:

<table>
<tr><th>Site No.</th><th>Site Name</th><th>Dwellings</th></tr>
<tr><td>1</td><td>Hoover Factory Site</td><td>440</td></tr>
<tr><td>2</td><td>Sweetwater Park, Trefechan</td><td>10</td></tr>
<tr><td>3</td><td>Upper Georgetown Plateau</td><td>50</td></tr>
<tr><td>4</td><td>Brondeg, Heolgerrig</td><td>50</td></tr>
<tr><td>5</td><td>Erw Las, Gellideg</td><td>1020</td></tr>
<tr><td>6</td><td>Beacon Heights, Swansea Road</td><td>20</td></tr>
<tr><td>7</td><td>Winchfawr, Heolgerrig</td><td>20</td></tr>
<tr><td>8</td><td>South of Castle Park</td><td>160</td></tr>
<tr><td>9</td><td>Cyfarthfa Mews, Swansea Road</td><td>19</td></tr>
<tr><td>10</td><td>Trevor Close, Pant</td><td>20</td></tr>
<tr><td>11</td><td>East Street, Dowlais</td><td>10</td></tr>
<tr><td>12</td><td>St Johns Church, Dowlais</td><td>20</td></tr>
<tr><td>13</td><td>Victoria House, Dowlais</td><td>19</td></tr>
<tr><td>14</td><td>Pen Y Dre Fields, Gurnos</td><td>40</td></tr>
<tr><td>15</td><td>Goetre Primary School, Gurnos</td><td>120</td></tr>
<tr><td>16</td><td>Former General Hospital</td><td>20</td></tr>
<tr><td>17</td><td>Haydn Terrace, Penydarren</td><td>40</td></tr>
<tr><td>18</td><td>Former St Peter and Paul Church, Abercanaid</td><td>13</td></tr>
<tr><td>19</td><td>Twynyrodyn</td><td>150</td></tr>
<tr><td>20</td><td>Former Mardy Hospital, Twynyrodyn</td><td>114</td></tr>
<tr><td>21</td><td>Bradley Gardens 2, Penyard</td><td>100</td></tr>
<tr><td>22</td><td>Former St Tydfils Hospital</td><td>50</td></tr>
<tr><td>23</td><td>Former Miners Hall</td><td>12</td></tr>
<tr><td>24</td><td>Former Ysgol Santes Tudful,</td><td>20</td></tr>
<tr><td>25</td><td>Sandbrook Place</td><td>12</td></tr>
<tr><td></td><td>Sub total</td><td>1,539</td></tr>
</table>
</td>
<td>♣ The policy places the most significant level of housing development in and around the existing Merthyr Tydfil urban area.
♣ There are no Natura 2000 sites adjacent to the primary growth area which could be directly impacted or easily accessible for recreational purposes.
♣ The policy will steer/ place small scale development in existing settlements away from European sites and associated sensitive areas.
♣ Policies SW11 & SW12 seek to reduce the emissions through improved design, more sustainable transport modes which act in mitigation.
♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level.
♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.</td>
<td>None</td>
</tr>
</table>

New homes will also be directed to our other settlements of Troedyrhiw, Merthyr Vale and Aberfan, Bedlinog, and Edwardsville, Quakers Yard, Trelewis and Treharris. The following sites are allocated for residential development within the 'Other Growth Area': **Site No. Site Name Dwellings** **26 Project Riverside, Merthyr Vale 153** **27 Walters Terrace, Aberfan 23** **28 Opposite Kingsley Terrace, Aberfan 12** **29 Adjacent to Manor View, Trelewis 248** **30 Stormtown, Trelewis 80** **31 Cwmfelin, Bedlinog 50** **32 Commercial Field, Treharris 15** **33 Cilhaul, Treharris 30** **34 Oaklands, Treharris 50** **Sub Total 661** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies. • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas. • The policy is unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.) • The allocations included in this policy will not directly result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.).		
Policy SW 4: Settlement Boundaries. **To encourage development within urban areas, support the re-use of previously developed land, and to protect and support the functioning of our rural economy and the countryside, settlement boundaries will be defined as follows:** **Primary Growth Area:** • **Merthyr Tydfil.** • **Trefechan.**	♣ This policy concentrates development in existing settlements/ urban areas with a focus around the main Merthyr Tydfil settlement. Focusing on existing urban areas by definition steers	None

Other Growth Areas: • **Troedyrhiw.** • **Aberfan and Merthyr Vale.** • **Quakers Yard, Edwardsville, Treharris and Trelewis.** • **Bedlinog.** **Outside defined settlement boundaries, proposals will be regarded as 'countryside development' and will not be permitted unless the development:** • **is for the purposes of agriculture or forestry;** • **is associated with rural enterprises or the winning and working of minerals;** • **is for the re-use, adaptation, or replacement of rural buildings and dwellings;** • **supports the expansion of an existing business in the countryside;** • **is for low-impact tourism, recreation or leisure facilities in accordance with Policy EcW7;** • **is for the provision of public utilities, infrastructure or waste management facilities that cannot reasonably be located elsewhere;** • **is required for the reclamation or treatment of unstable or contaminated land;** • **is for renewable energy in accordance with Policy EcW8;** • **is for affordable housing in accordance with Policy SW5;** • **or is low impact One Planet Development.** **Where 'countryside development' is acceptable in principle, the proposal must also satisfy other relevant plan policies.** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies. • The policy/proposals or allocations included in this policy will not directly • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas. • The policy is unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.)	development away from European sites and sensitive areas. ♣ The nearest Natura 2000 sites to Merthyr Tydfil town are Blaen Cynon, Cwm Cadlan and the Brecon Beacons. The development proposed will not have direct impacts at these sites. ♣ The policy is for limited growth (that will not generate significant increases in traffic/ recreational pressures) in settlements located at a distance from the nearest SAC, Aberbargoed Grasslands which is also separated from development at Trelewis by the conurbation of the settlement of Bargoed. ♣ There is potential for the concentration of development to lead to an overall increase in harmful air pollutants, e.g. through increased traffic movements. The potential for significant impact is however, dependant on the respective site sensitivities and the cumulative impacts of other plans. ♣ Policies SW11 & SW12 seek to reduce the emissions through improved design, more sustainable transport modes	

	which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	
Policy SW5: Affordable Housing Exception Sites **Small scale affordable housing developments will be permitted adjoining settlement boundaries and where it is demonstrated that:** • **The proposal meets an identified local need which cannot be satisfied within identified settlement boundaries;** • **The site does not exceed 10 dwellings;** • **The proposed dwelling(s) will be of a size, tenure and design which is commensurate with the identified affordable housing need;** • **In cases where the dwelling is to be provided by either a private landlord or the intended occupier, secure mechanisms are in place to ensure the property shall remain affordable in perpetuity; and** • **The development has reasonable access to the availability and proximity of local community services and facilities.** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies. • The policy concentrates development adjacent to existing urban areas, steering development away from European sites and sensitive areas. • The policy is unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.)	♣ The policy will steer/ place small scale development adjacent to existing settlements away from European sites and associated sensitive areas. ♣ Policies SW11 & SW12 seek to reduce the emissions through improved design, more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None

Policy SW6 – Hoover Strategic Regeneration Area **The Hoover Strategic Regeneration Area is identified on the key diagram to facilitate a major mixed-use development comprising of:** • **440 new homes,** • **Local convenience retail provision of 409 sqm,** • **New employment development on 6.5 hectares of land,** • **Pentrebach Station Park and Ride,** • **Provision of a new footbridge to Abercanaid; and** • **Safeguarded land for a new Metro station.** *Screening:* • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas. • The proposals or allocations included in this policy will not directly result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.); • The proposals or allocations included in this policy will not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC.	♣ The development proposed is within the existing urban area. ♣ There are no Natura 2000 sites adjacent to this area. ♣ Policies SW11 & SW12 seek to reduce the emissions through improved design, more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None
Policy SW7: The former Ivor Steel Works Regeneration Site. **Appropriate development on the former Ivor Steel Works site in Dowlais will be supported.** *Screening:* • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas.	♣ Supports development within existing urban areas on brownfield land with existing transport links which reduces the need to travel and the potential for increased emissions arising from a growth in road traffic. ♣ There are no Natura 2000 sites within close proximity.	None
Policy SW8 – Gypsy, Traveller and Showpeople sites. **The Glynmill site is shown on the proposals map as the preferred location for development for Gypsy,**	♣ Policies SW11 & SW12 seek to reduce the emissions through	None

Traveller and Showpeople needs. **Proposals for new Gypsy, Traveller and Showpeople accommodation will be permitted where:** • **The design, size of the site and number of pitches are appropriate to its location and the accommodation needs of the applicant(s); and** • **It has adequate access to services and facilities.** *Screening:* • The policy is unlikely to lead to development as sufficient land has been made available within the plan period within an existing urban area and away from European sites and sensitive areas. • Any additional development will be small scale and steered away from European sites and sensitive areas. • The policy is unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC);	improved design, more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	
Policy SW9: Planning Obligations **Where appropriate and having regard to development viability, planning obligations may be sought for:** **1. On site provision of affordable housing on sites of 10 homes or more at an indicative level of:** • **10% in the Primary Growth Area.** • **5% in the Other Growth Area.** **2. A financial contribution towards the provision of affordable housing:** • **On sites of between 5 and 9 homes or;** • **On sites of 10 or more homes, where on-site provision is not appropriate.** **3. The provision and / or improvement of open space on sites of 10 homes or more.** **4. Other relevant obligations not included within the Council's Community Infrastructure Levy (CIL) Regulation 123 List of Infrastructure.** *Screening:* The policy itself will not lead to development.	The policy does not explicitly involve development.	None

Policy SW10: Protecting and improving our open spaces **Development proposals that would have an unacceptable adverse impact or result in an unjustified loss of open space will not be permitted unless:** • **It would not cause or exacerbate a deficiency of open space in accordance with the Council's open space standards or;** • **The majority of the open space can best be retained and enhanced through the redevelopment of a small part of the site or;** • **Satisfactory equivalent community benefit or enhanced compensatory provision can be provided in accordance with the Council's open space standards and** • **In all cases, the open space has no significant nature or historic conservation importance.** **To enable access to nature, the following Local Nature Reserves (LNRs) are proposed:** **1. Bryngolau LNR, Merthyr Vale.** **2. Cefn Glas LNR, Treharris.** **3. Cwm Blacs LNR, Town.** **4. Cwm Taf and Cefn Coed Tip LNR, Park.** **5. Cwm Taf Fechan (existing) LNR, Vaynor.** **6. Goitre Lane LNR, Penydarren.** **7. Ifor Tip LNR, Dowlais.** **8. Newlands Park LNR, Penydarren, Dowlais and Town.** **9. Old Colliery Site Coed-y-Hendre &Nant Llwynog LNR, Bedlinog.** **10. Pentrebach/Nant-yr-Odin Tip LNR, Plymouth.** **11. Scwrfa (Gellideg Fields) &Cwm Ffrwdd Woodland LNR, Cyfarthfa.** **12. Y Graig LNR, Gurnos.** *Screening:* • The policy itself will not lead to development. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.	This policy approach implicitly protects the natural environment.	None

Policy SW11: Sustainable Design and Placemaking **Development must contribute to the creation of attractive and sustainable places through high quality, sustainable and inclusive design** **New development will be required to:** 1. **be appropriate to its local context in terms of scale, height, massing, elevational treatment, materials and detailing, layout, form, mix and density;** 2. **integrate effectively with adjacent spaces, the public realm and historic environment to enhance the general street scene and create good quality townscape;** 3. **not result in an unacceptable impact on local amenity, loss of light or privacy, or visual impact, and incorporate a good standard of landscape design;** 4. **contribute to the provision of green infrastructure, including open space in accordance with the Council's standards, sustainable drainage systems where appropriate, and ensure that the County Borough's network of green infrastructure is accessible and connected;** 5. **allow access for the widest range of people possible, and demonstrate that any traffic movements will not have an unacceptable impact on local amenity or highway safety and satisfy the Council's parking standards;** 6. **incorporate resource efficient/adaptable buildings and layouts using sustainable design and construction techniques;** 7. **minimise the demand for energy and, where appropriate, utilise renewable energy resources;** 8. **provide relevant utility services and infrastructure without causing any unacceptable environmental impacts;** 9. **provide adequate facilities and space for waste collections and recycling; and** 10. **promote the creation of healthy and active environments and reduce the opportunity for crime and anti-social behaviour.** *Screening:* • The policy itself will not lead to development. • The policy is intended to protect the natural environment, including biodiversity. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.	Provides sustainable design criteria for development that includes provision for a reduction in the potential indirect effects of construction and development.	None

Policy SW 12: Improving transport network. **Development that encourages a modal shift towards sustainable transport will be supported, including the enhancement of pedestrian, cycle, rail and bus facilities, in addition to any necessary road improvements. Development proposals will be expected to demonstrate how they reduce the need to travel and encourage the use of sustainable transport.** **To support the County Borough's transport network the following schemes are proposed:** **Walking and cycling** **1. Existing and proposed Active Travel Routes;** **Bus and rail** **2. New Merthyr Tydfil Central Bus Station;** **3. South East Wales Metro (Merthyr Tydfil Valley line) improvements;** **4. Safeguarding of land for a new metro station at the Hoover Strategic Regeneration Area;** **5. Pentrebach Rail Station Park and Ride;** **6. Safeguarding of the Cwm Bargoed rail line and rail head;** **7. Safeguarding of land for the future rail line extension (Cwm Bargoed to Dowlais Top); and,** **Highways** **8. Safeguarding land for the duelling of the A465 (T) Heads of the Valleys Road.** *Screening:* • The A465 proposals are unlikely to result in loss, and/or have the potential to affect the loss and or degradation of marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.) • The proposals included in this policy will not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC.	♣ This policy safeguards land for development of the A 465 (T) Heads of the Valleys in close proximity to Rhondda Cynon Taf and the BBNP. ♣ Potential impacts arising from the road and regeneration area improvements are increases in air pollution generated by a growth in traffic movements on the road and potential effects on migrating species including lesser horse shoe bats and marsh fritillary butterflies. ♣ The policy also supports public transport which reduces the potential for increased emissions from road traffic.	None
Policy SW13: Protecting and Improving Local Community Facilities **The provision of new and enhanced community facilities will be supported subject to satisfying other relevant LDP policies.**	Seeks to control, rather than direct development and is concerned with protecting and improving local community facilities	None

The Council will protect and support the enhancement of the County Borough's existing community facilities. **Development proposals that would result in a loss of an existing community facility will only be permitted where:-** • **alternative provision of at least equivalent value to the local community can be provided nearby, or** • **it can be demonstrated that existing provision is inappropriate or surplus to the needs of the community and is no longer required, or** • **it can be demonstrated there is no longer a viable community use for the facility.** *Screening:* The policy itself will not lead to development.		
Policy CW1: Historic Environment **The integrity of our historic environment assets will be conserved and enhanced. Development proposals will only be permitted where it can be demonstrated they would preserve or enhance the architectural quality, character or the historic or cultural importance of our historic environment assets.** **Development within Urban Character Areas and Archaeologically Sensitive Areas must have regard to their special character and archaeological importance.** *Screening:* • The policy itself will not lead to development. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.	Seeks to control, rather than direct development and is concerned with conservation and preservation of the historic and cultural environment.	None
Policy CW2: Cyfarthfa Heritage Area **The Cyfarthfa Heritage Area is identified on the proposals map to support the development of a heritage based visitor attraction to complement the offer of Cyfarthfa Castle and Park.** *Screening:* The policy will steer development away from European sites and associated sensitive areas.	Directs development to a focussed area within settlement limits.	None

Policy EnW 1: Nature Conservation and Ecosystem Resilience **Development proposals will be required to promote the resilience of ecosystems. In particular, proposals will be required to maintain and enhance biodiversity interests unless it can be demonstrated that:** **1. The need for the development clearly outweighs the biodiversity value of the site; and** **2. The impacts of the development can be satisfactorily mitigated and acceptably managed though future management regimes.** *Screening:* • The policy itself will not lead to development. • The policy will steer development away from European sites and associated sensitive areas. • The policy is intended to protect the natural environment, including biodiversity. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.	Policy is focused on nature conservation and ecosystem resilience and prevents development where ecological impacts are unacceptable.	None
Policy EnW2: Nationally Protected Sites and Species **Development likely to have an adverse effect either directly or indirectly on the conservation value of a Site of Special Scientific Interest will only be permitted where it is demonstrated that:** • **There is no suitable alternative to the proposed development; and** • **It can be demonstrated that the benefits from the development clearly outweigh the special interest of the site; and** • **Appropriate compensatory measures are secured; or** • **The proposal contributes to the protection, enhancement and positive management of the site.** **Development proposals likely to affect protected species will only be permitted where it is demonstrated that:** • **The population range and distribution of the species will not be significantly adversely impacted;** • **There is no suitable alternative to the proposed development;** • **The benefits of the development clearly outweigh the adverse impacts on the protected species; and** • **Appropriate avoidance, mitigation and compensation measures are provided.** *Screening:* • The policy itself will not lead to development. • The policy will steer development away from European sites and associated sensitive areas.	Seeks to control, rather than direct development and is concerned with conservation and preservation of the natural environment.	None

• The policy is intended to protect the natural environment, including biodiversity. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.		
Policy EnW3: Regionally Important Geological Sites, Sites of Importance for Nature Conservation and Priority Habitats and Species **Development proposals likely to have an adverse impact on Sites of Importance for Nature Conservation, Regionally Important Geological Sites or Priority Habitats and Species will only be permitted where it can be demonstrated that:** **1. The need for the development clearly outweighs the conservation value of the site;** **2. Adverse impacts on nature conservation and geological features can be avoided;** **3. Appropriate and proportionate mitigation and compensation measures can be provided; and** **4. The development maintains and where possible enhances biodiversity interests.** *Screening:* • The policy itself will not lead to development. • The policy will steer development away from European sites and associated sensitive areas. • The policy is intended to protect the natural environment, including biodiversity. • The policy is intended to conserve or enhance the natural, built or historic environment, and such enhancements are unlikely to affect a European site.	Seeks to control, rather than direct development and is concerned with conservation and preservation of the natural environment.	None
Policy EnW4: Environmental Protection **Development proposals will be required to demonstrate they will not result in an unacceptable impact on people, residential amenity, property and / or the natural environment from either:** • **Pollution of land, surface water, ground water and the air;** • **Land contamination;** • **Hazardous substances;** • **Land stability;** • **Noise, vibration, odour nuisance and light pollution; or** • **Any other identified risk to public health and safety.** **Where impacts are identified the Council will require applicants to demonstrate that appropriate measures can be taken to minimise the impact identified to an acceptable level.** **Planning conditions may be imposed or legal obligation entered into, to secure any necessary mitigation and monitoring processes.**	Seeks to control, rather than direct development (except in the case of flood zones) and is concerned with the impact of development on people, residential amenity and the natural environment.	None

In respect of flood risk, new developments will be expected to avoid unnecessary flood risk and meet the requirements of TAN15. No highly vulnerable development will be permitted within Development Advice Map (DAM) zone C2. Development will only be permitted in areas at risk of flooding where it can be demonstrated that the site can comply with the justification and assessment requirements set out in TAN15. *Screening:* • The policy itself will not lead to development. • The policy will steer development away from European sites and associated sensitive areas. • The policy is intended to protect the natural environment. • The policy seeks directly address the issue of the impact of new development on air pollution.		
Policy EnW5: Landscape Protection **The following areas are designated as Special Landscape Areas (SLAs):** **SLA1: Nant Morlais & Cwm Taf Fechan;** **SLA2: Winchfawr;** **SLA3: Merthyr West Flank;** **SLA4: Pontygwaith and** **SLA5: Gelligaer and Taf Bargoed.** **Development proposals will be permitted where it can be satisfactorily demonstrated that:** **a) It would not cause unacceptable harm to the character and quality of the landscape setting of the County Borough;** **b) Development within Special Landscape Areas are sensitive to their special characteristics;** **c) Development respects the local distinctiveness and historic character of the landscape;** **d) Development will safeguard local landscape character and landscape features, including views, which make a significant contribution to the character, history and setting of the locality;** **e) Development secures the enhancement of the character, appearance and quality of the landscape, through restoration, management or enhancement where possible;** **f) There is no satisfactory alternative and the benefits associated with the development can be demonstrated to outweigh the harm; and** **g) Where damage to local landscape character cannot be avoided appropriate mitigation has been secured.**	Seeks to control, rather than direct development and is concerned with protecting and enhancing the quality of the Landscape of the County Borough	None

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Screening:

- The policy itself will not lead to development.
- The policy will steer development away from European sites and associated sensitive areas.
- The policy is intended to protect the natural environment.

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Policy EcW1: Provision of Employment Land

To support economic development, 35.65 hectares of employment land (for B1, B2, B8 uses) is allocated at the following locations:

Site	Gross area (Ha)	Net area (Ha)
1. Hoover Strategic Regeneration Area	**-**	**5**
2. Former Hoover Factory Car Park	**1.5**	**1.5**
3. Goatmill Road	**16.98**	**14.75**
4. Ffos-y-fran	**18.85**	**11.3**
5. Land South of Merthyr Tydfil Industrial Estate	**3.1**	**3.1**
Total		**35.65 Ha**

Screening:

- The policy will have no direct effect because development is dependent on implementation of lower tier policies.
- The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas.
- The policy will steer development away from European sites and associated sensitive areas.
- The allocations included in this policy will not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC.

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- ♣ The policy directs development within and around existing urban areas with existing transport links.
- ♣ There are no SACs within proximity to these areas.
- ♣ Policies SW11 & 12 seek to reduce the emissions through improved design and more sustainable transport modes which act in mitigation.
- ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level.
- ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.

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Policy EcW2: Protecting employment sites

In order to protect the employment function of the County Borough's business and employment sites, development will be permitted at Rhydycar Business Park where:-

- **it falls within Use Class B1; or**

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<td>Seeks to control, rather than direct development and is concerned with protecting the</td>
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• **it provides an ancillary facility or service that supports the primary employment use.** • **At Pengarnddu, Pant Industrial Estate, Goatmill Road, EFI Industrial Estate, Cyfarthfa Industrial Estate, Triangle Business Park, Merthyr Tydfil Industrial Park, The Willows/ Abercanaid Industrial Estate, and at allocated employment sites, development will be permitted if:-** • **It is within Use Classes B1, B2 or B8; or** • **It provides an ancillary facility or service that supports the primary employment use, or** • **It is an acceptable complementary commercial service outside class B uses, or** • **It is an appropriate waste management facility compatible with existing industrial and commercial activities.** **Development proposals for uses other than those stipulated and that would result in the loss of employment land / premises at the above sites will only be permitted where it can be demonstrated that the proposal would not lead to an unacceptable change in the nature of the employment site and where the existing use is inappropriate or the land / premises are surplus to the requirements of the employment market.** **At existing employment sites and premises outside the sites identified development proposals for non B-class uses that would result in the loss of the employment land / premises will be permitted where it can be demonstrated that the existing use is inappropriate or the land / premises are surplus to the requirements of the employment market.** *Screening:* • The policy itself will not lead to development. • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas. • The sites protected in this policy will not directly contribute to the degradation of the environmental conditions of the Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC.	existing employment sites in the County Borough.	
Policy EcW3: Retail Hierarchy- Supporting Retail Provision **Merthyr Tydfil Town Centre is the favoured location for retail development, being situated at the head of a retail hierarchy and being followed by the local centres of Dowlais, Gurnos, Cefn Coed and Brecon Road/Morgantown, Troedyrhiw, Aberfan, Treharris and a new local centre forming part of the 'Hoover Strategic Regeneration Area'. Proposals for new and enhanced retail provision in all these centres will be permitted where they improve the vitality and viability of the centre(s) concerned.**	♣ The policy directs development within and around existing urban areas with existing transport links. ♣ There are no SACs within proximity to these areas.	None

Outside the above centres, proposals will be subject to an assessment of need and a strict application of the sequential test. Proposals will then only be permitted where they avoid causing harm to town/local centre vitality and viability. *Screening:* • The policy itself will not lead to development. • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas.	♣ Policies SW11 & 12 seek to reduce the emissions through improved design and more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	
Policy EcW4: Retail Allocation **To support the Hoover Strategic Regeneration Area land is allocated to provide 409sqm for local convenience retail.** *Screening:* • The policy directs development within an existing urban area. • The policy concentrates development in an existing urban area, steering development away from European sites and sensitive areas. • The allocation included in this policy will not have the potential to affect the loss and/or degradation marsh fritillary habitat (of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC.)	♣ The policy directs development within an urban area with existing transport links. ♣ There are no SACs within proximity to these areas. ♣ Policies SW11 & 12 seek to reduce the emissions through improved design and more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None

Policy EcW5: Town and Local Centre Development **Development enhancing the vitality and viability of the Town and Local Centres will be supported.** **Within the Town Centre Primary Shopping Area (PSA) the change of use of the ground floor from A1 to another 'A class' use will be permitted where;** • **At least 75% of the commercial uses at street level within the PSA remain A1, and;** • **There are no more than two adjoining 'non-A1' units in any row of five units, provided there are not more than three 'non-A1' units in any 5 units.** **Within the PSA and local centres, the change of use of the ground floor to 'non-retail' use classes will only be permitted where:-** • **Alternative provision of at least equivalent value to the local community can be provided nearby, or** • **It can be demonstrated that existing provision is inappropriate or surplus to the needs of the community and is no longer required, or** • **It is demonstrated through active and appropriate marketing that the existing use is no longer economically viable; and** • **The proposal would not result in an over concentration of non-A1 uses that would be detrimental to the vitality, attractiveness and viability of the local centre.** • **The proposal would not result in the creation of a dead window frontage; and** • **The proposal would not have an unacceptable effect on the amenity of neighbouring uses.** *Screening:* • The policy itself will not lead to development. • The policy directs development to existing urban areas, steering development away from European sites and sensitive areas.	Seeks to control, rather than direct development and is concerned with protecting and enhancing the viability and viability of the County Borough's Town and Local Centres	None
Policy EcW6: Out of Town Retailing areas **Proposals for retail development on new sites or existing retail areas in out-of-town locations, including changes of use, extensions, the merger or subdivision of existing units or amendments to existing planning conditions relating to the sale of goods will only be permitted where:** • **It can be demonstrated that there is an additional need for the proposal which cannot be provided within an existing town or local retail centre, and** • **The proposal would not either individually or cumulatively with other existing or consented developments have an unacceptable impact on the trade, turnover, vitality and viability of the town or local centres.**	Seeks to control, rather than direct development and is concerned with protecting the viability and viability of the County Borough's Town and Local Centres	None

Screening: • The policy itself will not lead to development. • The policy directs development to existing urban areas, steering development away from European sites and sensitive areas.		
LDP Policy EcW7: Tourism, Leisure and Recreation Development **Tourism, leisure and recreation development within settlement boundaries is generally supported, particularly where they aid the revitalisation and regeneration of the Town and Local Centres.** **Low-impact tourism, leisure and recreation development outside settlement boundaries will be favoured provided the need for a 'countryside location' is fully justified, it minimises environmental impacts and is of an appropriate scale to its surroundings.** *Screening:* • The policy itself will not lead to development. • The policy generally directs development towards existing urban areas, steering development away from European sites and sensitive areas. • The policy does however favour low-impact development outside settlement boundaries.	♣ The policy generally directs development within an urban area with existing transport links. ♣ There are no SACs within proximity to these areas. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None
LDP Policy EcW8: Renewable Energy **We will support the use of renewable energy as a tangible means of reducing our local carbon footprint, where appropriate to do so.** **Development proposals for renewable energy will be permitted where:** • **They do not have an unacceptable landscape and visual impact, including on the setting of the Brecon Beacons National Park.** • **There would be no unacceptable cumulative impacts in combination with existing or consented development.** • **Satisfactory mitigation can be put in place to minimise the impacts of the renewable energy proposal and its associated infrastructure.** • **Proposals make provision for the appropriate restoration and after-care of the land for its beneficial future re-use.**	♣ The policy designates search areas for solar energy generation, but also seeks to control renewable energy development and is concerned with supporting renewable energy proposals, where it is appropriate to do so. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent	None

Within the Local Search Areas (LSA), proposals for solar energy generation will be permitted subject to the above criteria. Proposals for other development within these areas will only be permitted where they can demonstrate that they would not unacceptably prejudice the renewable energy generation potential of the LSA. *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies.	development where ecological and landscape impacts are unacceptable.	
LDP Policy EcW9: District Heating **The use of combined heat and power (CHP), combined cooling, heat and power (CCHP) and district heating will be encouraged.** **Within the Heat Priority Areas listed below, major development will be expected to incorporate, where viable and technically feasible, infrastructure for district heating and to connect to existing systems where available. Developers should submit an energy strategy along with their application. The following are identified as Heat Priority Areas:** • **Project Heartland** • **Goat Mill Road** • **Hoover Strategic Regeneration Area** *Screening:* The policy directs development to existing urban areas, steering development away from European sites and sensitive areas.	♣ The policy designates areas where district heating proposals will be encouraged. ♣ There are no SACs within proximity to these areas. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None
LDP Policy EcW10: Sustainably Supplying Minerals **The Plan will contribute to meeting society's need for a continuous and secure supply of minerals by:** • **Safeguarding mineral resources from permanent development which would sterilise them or hinder their extraction;** • **Maintaining a minimum 10 year land bank of permitted aggregate reserves;** • **Favouring proposals which promote the sustainable use of minerals and encourage the use of secondary and recycled resources; and by,** • **Safeguarding the mineral freight railway facilities at Cwm Bargoed.**	♣ The safeguarding of mineral resources and the rail facilities at Cwm Bargoed will have no direct effect because minerals development is dependent on implementation of lower tier policies.	None.

Screening: The policy will have no direct effect because minerals development is dependent on implementation of lower tier policies.	♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	
LDP Policy EcW11: Minerals Development **Proposals for mineral extraction and associated development will only be allowed where:** • **There is a proven national, regional or local need for the mineral which cannot be met from existing sources or from secondary or recycled material;** • **They would not result in unacceptable impacts on the natural or historic environment and potential measures to enhance the natural environment have been adequately assessed;** • **They would not result in unacceptable impacts on landscape character and/or visual amenity;** • **They would not result in an unacceptable impact on health and amenity including the effects of dust, noise, vibration and traffic;** • **They would not result in unacceptable impacts on surface water drainage, groundwater resources or exacerbate flood risk;** • **They would not result in unacceptable impact in terms of transportation considerations including access, parking, traffic generation, and enjoyment of public rights of way, and the potential for minerals to be transported by means other than road has been adequately assessed;** • **They would not have an unacceptable impact on land stability;** • **They include acceptable proposals for progressive and final restoration, aftercare and beneficial after-use; and** • **They maximise opportunities to re-use and recycle mineral waste.** **The production and use of alternative and recycled materials will be supported as substitutes for naturally occurring aggregates.** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies. • The policy will steer development away from European sites and associated sensitive areas.	♣ Seeks to control, rather than direct development and seeks to ensure that minerals development only takes place where appropriate. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None

LDP Policy EcW12: Minerals Buffer Zones **Buffer Zones have been established between permitted, active and inactive mineral operations in the County Borough and other sensitive land uses. Within these zones, proposals for new development will only be allowed where they:** **1. Would not unacceptably affect operations within the mineral site; and** **2. Would not be unacceptably affected by operations within the mineral site.** *Screening:* The policy will have no direct effect as the policy does not consider the impact of development on European sites and associated sensitive areas.	♣ Seeks to direct development away from mineral sites and ensure that there is no conflict between active mineral operations and new development proposals. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None
LDP Policy EcW13: Minerals Safeguarding **Known mineral resource of coal, sandstone, sand and gravel, and limestone are safeguarded as shown on the proposals map.** **New development will only be permitted in an area of known mineral resource where it has first been demonstrated that:** **1. Any reserves of minerals can be economically extracted prior to the commencement of development; or** **2. Prior extraction would have an unacceptable impact on environmental or amenity considerations; or** **3. The resource in question is of poor quality / quantity; or** **4. The development would have no significant impact on the possible future working of the resource by reason of its nature, location or size.** *Screening:* • The policy safeguards mineral resources but also ensures that any proposals will not have an unacceptable impact on environmental considerations.	♣ Policy ensures that any proposals will not have an unacceptable impact on environmental considerations. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None

LDP Policy EcW14: Waste Facilities **Waste treatment facilities will only be permitted where there is an identified need, where they are situated in locations where they would not have a significant adverse effect on amenity or the environment, accord with the waste hierarchy, the proximity principle and provide comprehensive restoration and aftercare of the land for a beneficial re-use. Proposals for new facilities should provide a Waste Planning Assessment.** **The following locations are identified as preferred areas of search for waste management facilities:** • **Pengarnddu Industrial Estate** • **Pant Industrial Estate** • **Goatmill Road** • **Merthyr Tydfil Industrial Park** • **Land adjoining the A4060, Ffos-Y-Fran** **Land at Trecatti is safeguarded for continued necessary landfill of unavoidable residual wastes.** *Screening:* • The policy will have no direct effect because development is dependent on implementation of lower tier policies. • The policy concentrates development in existing urban areas, steering development away from European sites and sensitive areas. • The policy will steer development away from European sites and associated sensitive areas.	♣ The policy directs development within and around existing urban areas with existing transport links. ♣ There are no SACs within proximity to these areas. ♣ Policies SW11 & 12 seek to reduce the emissions through improved design and more sustainable transport modes which act in mitigation. ♣ Policy EnW4 seeks to minimise the impact of air pollution, amongst other things to an acceptable level. ♣ Policies En1 – 3 & 5 prevent development where ecological and landscape impacts are unacceptable.	None

7. CONCLUSION

7.1 As concluded in the HRA of the PS, the HRA of the Deposit Plan has taken on board the following key issues:

- ♣ To avoid the loss / degradation of marsh fritillary habitat, of relevance to the Aberbargoed Grasslands SAC and Blaen Cynon SAC and
- ♣ Emissions (air quality) impacts arising from new industrial development on protected and allocated industrial sites which may contribute to the degradation of the environmental conditions of Brecon Beacons SAC, Coedydd Nedd a Mellte SAC, Cwm Cadlan SAC, and Llangorse Lake SAC.

7.2 For each of the five relevant Natura 2000 sites within a 15km radius of the County Borough, likely to be affected by the above the screening process was re-run to ensure any adverse effects arising from specific LDP proposals and allocations either 'alone' or' in-combination' with other proposals, plans, projects or programmes on the integrity of the Natura 2000 sites, are avoided.

7.3 The conclusion of the re-run of screening for the Deposit Plan is shown in Table 4.

TABLE 4: LDP HRA Screening Summary

		Preferred Strategy Stage Conclusions	Deposit Plan Stage Conclusions
Relevant Special Areas of Conservation (SAC)	Key Issue	AA required alone or in combination for Deposit LDP stage? **x** No ✓ Yes **?** Uncertain	AA required alone or in combination for Deposit LDP? **x** No ✓ Yes **?** Uncertain
Aberbargoed Grasslands	Loss and degradation of Marsh fritillary butterfly habitats	**?**	**x**
Blaen Cynon	Loss and degradation of Marsh fritillary butterfly habitats	**?**	**x**
Brecon Beacons	Impact of emissions (air pollution)	**?**	**x**
Coedydd Nedd a Mellte	Impact of emissions (air pollution)	**?**	**x**
Cwm Cadlan	Impact of emissions (air pollution)	**?**	**x**
Llangorse Lake / Llyn Syfaddan	Impact of emissions (air pollution)	**?**	**x**

APPENDIX 1: IDENTIFICATION OF NATURA 2000 SITE RELEVANT VULNERABILITIES FOR RELEVANT SACS.

SAC Name / Vulnerabilities	An LDP could have a direct impact	An LDP could have an indirect impact	Aberbargoed Grasslands	Blaen Cynon	Brecon Beacons	Coedydd Nedd a Mellte	Cwm Cadlan	Llangorse Lake / Llyn Syfaddan
ISSUES AFFECTING POTENTIALLY AIR POLLUTION								
Weather	X	✓	X	✓	X	X	X	X
Air pollution	X	✓	X	X	✓	✓	✓	✓
Quarrying / dust deposition	✓	X	X	X	X	X	✓	X
Disturbance	✓	X	X	X	X	X	X	X
Development/ Urbanisation	✓	X	X	X	X	X	X	X
ISSUES AFFECTING POTENTIALLY MARSH FRITILLARY HABITATS								
Grazing	X	✓	✓	✓	✓	✓	✓	X
Burning	X	✓	✓	✓	X	X	X	X
Invasive species	X	✓	X	X	X	X	X	X
Traditional agricultural management, agricultural practice and land improvement.	X	✓	X	✓	X	X	X	✓
Scrub encroachment	X	✓	✓	✓	X	X	✓	X
Inappropriate tree planting	X	✓	X	✓	X	X	X	X
Competition from conifers, beech and sycamore.	X	✓	X	X	X	✓	X	X
Migration barriers	X	✓	X	X	X	X	X	X
Fly tipping/dumping	X	✓	✓	X	X	X	X	X
Nutrient Enrichment	✓	X	X	X	X	X	✓	✓
Parasites	X	✓	X	✓	X	X	X	X
Rock climbing	X	✓	X	X	✓	X	X	X
Scrambling	X	✓	X	X	X	✓	X	X
Unauthorised vehicles	X	✓	X	X	X	X	X	X

APPENDIX 2: CONSIDERATION OF RELEVANT NATURA 2000 SITES IN LDP SCREENING ASSESSMENTS.

SAC NAME	RELEVANT LDP SCREENING ASSESSMENT
Aberbargoed Grasslands	Caerphilly - Detailed screening assessment. The most significant potential 'in-combination' impact identified is air pollution arising from the cumulative effects of development (housing, infrastructure, major transport routes) in the region (Page 18 of 257) (Enfusion, 2008).
Blaen Cynon	RCT - It is assessed that the LDP will not have LSEs on Blaen Cynon SAC either alone or in-combination in regards to airborne pollution. There is potential for development proposed in the LDP (Policy NSA 8 & Policy NSA 14) (Rhondda Cynon Taff County Borough Council, 2011) and the Trunk Road Forward Programme to have significant effects on Blaen Cynon SAC through changes to the hydrological regime in management units 2, 3, 5 and 6. If the avoidance and mitigation measures proposed earlier in this section (paragraphs 4.17-4.18) (Efusion, HABITATS REGULATIONS (APPROPRIATE ASSESSMENT) REPORT, 2010) are effectively implemented. The Deposit Draft Plan is unlikely to have significant adverse effects on the Blaen Cynon SAC either alone or in-combination. BBNPA - For this strategic plan level HRA to conclude that the Deposit LDP would not have likely significant effects (LSEs) on the Blaen Cynon SAC as a result of atmospheric pollution either alone or in combination the recommended policy safeguard and monitoring requirements must be incorporated into the Deposit LDP. It is assessed that development would not have LSEs on the Blaen Cynon SAC as a result of habitat loss or fragmentation either alone or in combination if the recommended policy safeguard is incorporated into the Deposit LDP.
Brecon Beacons	BBNPA - Scoped out.
Coedydd Nedd a Mellte	RCT - Scoped out (Neath Port Talbot County Borough Council, 2011). BBNPA – Scoped out.
Cwm Cadlan	RCT - Scoped out (Efusion, HABITATS REGULATIONS (APPROPRIATE ASSESSMENT) REPORT, 2010).
Cwm Clydach Woodlands / Coedydd Cwm Clydach	Monmouthshire - (Efusion, Habitats Regulations Assessment (Appropriate Assessment) Addendum Report, 2014). It is assessed that the Deposit LDP in combination with development proposed in surrounding areas will not have adverse effects on the integrity of European sites through increased atmospheric pollution (Efusion, Habitats Regulations Assessment (Appropriate Assessment) Addendum Report, 2014).
Llangorse Lake / Llyn Syfaddan	BBNPA - It is assessed that the Deposit LDP alone will not have LSEs on Llangorse Lake SAC through increased disturbance; therefore the Stage 1 screening assessment is supported. The Deposit LDP will not have likely significant in combination effects on Llangorse Lake SAC through increased disturbance. It is assessed that the Deposit LDP will not have likely significant effects either alone or in combination on Llangorse Lake SAC through reduced water quality if the recommended policy safeguards are incorporated into the Plan.
River Usk / Afon Wysg	BBNPA - It is assessed that the Deposit LDP alone would not have LSEs on the River Usk SAC through increased disturbance if the recommended policy safeguard is incorporated into the Plan. It is assessed that the Deposit LDP would not have LSE on the River Usk SAC either alone or in combination through reduced water quality if the recommended policy safeguards and monitoring are incorporated into the Plan. It is assessed that the Deposit LDP would not have LSE on the River Usk SAC either alone or in combination through reduced water levels if the recommended policy safeguard is incorporated into the Plan.
Usk Bat Sites / Safleodd Ystlumod Wysg	BBNPA / Monmouthshire/ Powys - Scoped in. BBNPA - It is assessed that the Deposit LDP alone will not have LSEs on the Usk Bat Sites SAC as a result of increased disturbance and habitat loss and fragmentation if the recommended policy safeguards are incorporated into the Plan. Assessed that the Deposit LDP would not have likely significant in combination effects on the USK Bat Sites SAC through increased disturbance and habitat loss and fragmentation if the recommended policy safeguards are incorporated into the Plan.

APPENDIX 3: RELEVANT QUALIFYING SPECIES MIGRATION

Species	Suggested buffer	Source material supporting buffer distance	Particular vulnerabilities	Associated Natura 2000 sites
Marsh fritillary butterfly	2km	Carmarthenshire Local Biodiversity Action Plan. Butterfly Conservation.	♣ Increased fragmentation and isolation of habitats. ♣ Inappropriate management of sites including changes. ♣ In grazing stock and practice leading to loss of food plant (devil's bit scabious *Succissa pratensis)* overgrazing, burning and mowing. ♣ Adults tend to be sedentary and remain in a series of linked metapopulations, forming numerous temporary sub-populations, which frequently die out and re-colonise. Where unable to do this, populations do not seem able to persist in habitat fragments. It is therefore essential to conserve a cluster of sites in close proximity. ♣ Afforestation and development on habitats.	Aberbargoed Grasslands SAC & Blaen Cynon SAC

APPENDIX 4: RELEVANT NATURA 2000 SITE INFORMATION – RELEVANT SPECIAL AREAS OF CONSERVATION WITHIN 15KM OF MERTHYR TYDFIL COUNTY BOROUGH AREA

1. Aberbargoed Grasslands
2. Blaen Cynon
3. Brecon Beacons
4. Coedydd Nedd a Mellte
5. Cwm Cadlan
6. Llangorse Lake

All core site specific information unless otherwise stated has been referenced from the Natural Resources Wales (Sites protected by European and international law-designated site search - https://naturalresources.wales/conservation-biodiversity-and-wildlife/find-protected-areas-of-land-and-seas/designated-sites-search/?lang=en) and the Joint Nature Conservation Committee website (Protected Sites http://jncc.defra.gov.uk/ProtectedSites/SACselection/SAC_list.asp?Country=W) & http://jncc.defra.gov.uk/page-1403)

Site Name: Aberbargoed Grasslands Location Grid Ref: ST163992 JNCC Site Code: UK0030071 Size: 39.78 ha Designation: SAC	***Habitats Regulations Assessment: Data Proforma***
Site Description	Aberbargoed Grasslands covers an area of 42.5ha and lies on a southwest facing hillside in the Rhymney Valley, 1km east of Bargoed. The site occupies an urban fringe position, between 200m and 290m above sea level. The fields in the south and west of Aberbargoed Grasslands have impeded drainage and contain a mixture of marshy grassland communities. Areas of particular interest are characterised by abundant purple moor grass *Molinia caerulea* and meadow thistle *Cirsium dissectum* with devil's bit scabious *Succisa pratensis* and carnation sedge *Carex panicea*. Other species such as saw-wort *Serratula tinctoria* and lousewort *Pedicularis sylvatica* occur frequently in heavily flushed areas. Associated stands of *Molinia caerulea – Potentilla erecta* mire contain abundant purple moor grass with tormentil *Potentilla erecta*, mat grass *Nardus stricta*, common sedge *Carex nigra* and spotted orchid *Dactylorhiza maculata*. Small stands of rush pasture are scattered across the site, with soft rush *Juncus effuses*, greater bird's foot trefoil *Lotus uliginosus* and marsh bedstraw *Galium palustre*.

Relevant Qualifying Features	**Annex II species that are a primary reason for selection of this site:** ♣ *Marsh fritillary Butterfly Euphydryas (Eurodryas, Hypodryas) aurinia* **Annex I habitats present a a qualifying feature, but not a primary reason for selection:** ♣ *Monlinia meadows on calcareous, peaty or clayey-sitiladen soils (Monlinion caeruleae)*
Conservation Objectives	<u>Vision for the site:</u> Walking through this site on a hot sunny day you are enveloped by butterflies, most notably orange and black coloured (these are the colours of the marsh fritillary). The population is viable long term with enough marshy grassland and, more importantly, the butterfly's foodplant devil's bit scabious present to support them. Marshy grassland is seen over half of the site, preferably increasing to cover a wider area. Established woodland /scrub and bracken on this site do not occupy more than 20% of the site. The remainder of the site is a mixture of neutral grassland, wet heath and mire. During the summer a walk over the site will show you the wide range of plants and insects that thrive here. There is a mixture of different grasses and flowers that add splashes of colour. The tallest common plants, standing at about knee-height, are grasses and sedges including purple moor-grass and carnation sedge. Growing amongst these plants you will also find Meadow-thistle, devil's-bit scabious and tormentil. Where the ground is particularly wet you see blunt-flowered rush, sharp flowered rush with common marsh bedstraw, greater bird's-foot trefoil and water mint. Where neutral grassland replaces marshy grassland the types of plants and animals that live there change. Here the tallest plant is black knapweed with common bird's-foot trefoil, red clover, oxeye daisy, devil's-bit scabious and autumn hawkbit growing amongst it. Species that show agricultural modification, such as perennial rye grass and white clover are uncommon. Scrub species such as willow and birch are also uncommon. **Annex II species that are a primary reason for selection of this site:** *Marsh fritillary Butterfly (Euphydryas (Eurodryas, Hypodryas) aurinia)* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: 1. The site will support a sustainable metapopulation of the marsh fritillary in the Aberbargoed area. This will require at least 50ha of suitable habitat, although not all of this will be within the SAC 2. The population will be viable in the long term, acknowledging the extreme population fluctuations of the species. 3. Habitats on the site will be in optimal condition to support the metapopulation. 4. At least 25ha of the total site area will be marshy grassland suitable for supporting marsh fritillary, with Succisa pratensis present and only a low cover of scrub. 5. At least 6.25ha will be good marsh fritillary breeding habitat, dominated by purple moor-grass Molinia caerulea, with S. pratensis present throughout and a vegetation height of 10-20cm over the winter period. 6. All factors affecting the achievement of the foregoing conditions are under control.

Component SSSIs	The plan area has been divided into 2 management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based on mainly tenure, but also with reference to status and land management requirements.
Key Environmental Conditions (factors that maintain site integrity)	Management Requirements for relevant qualifying features: It is essential that restoration management is undertaken at Aberbargoed Grasslands to improve the quality and quantity of habitat available to marsh fritillaries. This primarily needs to include the establishment of suitable grazing regime, scrub clearance and control of illegal burning. Recent Management Actions: In 2005 Caerphilly were successful in gaining funding via the Heritage Lottery Fund, this along with money from CCW has led to a full- time officer being appointed to Aberbargoed Grasslands. There is also a part-time stock handler. Work has progressed well on the site in the past few years; the site is now stock-proof and a mixture of Welsh Black and Belted Galloways graze the land with a Limousin bull. Scrub clearance and bracken control has begun and flight lines have been cut to improve the connectivity for the butterflies. A programme has been set up to educate the local community to understand why this area is important. A newsletter has been created detailing activities on the grassland and difficulties the site is facing. This and the presence of staff and stock onsite seem to have halted the illegal burning and off-roading.
SAC Condition Assessment	*Marsh fritillary Butterfly Euphydryas (Eurodryas, Hypodryas) aurinia:* ***Unfavourable***
Vulnerabilities (includes existing pressures and trends)	Grazing: The primary interest of this site is the population of marsh fritillary butterflies which are dependent upon habitats such as the *Molinia* meadows and the wet heath. The future of these habitats depends on traditional management of extensive grazing. Vandalism: At present, the site is under-grazed and under-managed and is prone to vandalism such as burning. However, these problems are being addressed through liaison with the site owners and the local authority. A management plan has been drawn up and discussions are currently being undertaken towards securing a management agreement with the owners. This will secure consistent management on the site and will maintain or enhance the conservation value of the site.
Landowner/ Management Responsibility	In 2005 Caerphilly County Borough Council took over the management of the site and a site manager and stock handler are now in post. With this presence on the site and other measures, arson, fly-tipping and off-roading have become much less frequent.
HRA/AA Studies undertaken that address this site	HRA Screening of Caerphilly's Local Development Plan (2006-2021) Deposit, October 2008 http://www.caerphilly.gov.uk/pdf/Environment_Planning/LDP/SEA_SA-Part2-Doc5-Habitat-Regulations-Assessment.pdf

Site Name: Blaen Cynon ***Location Grid Ref: SN946066*** ***JNCC Site Code: UK0030092*** ***Size: 66.83 ha*** ***Designation: SAC***	***Habitats Regulations Assessment: Data Proforma***
Site Description	Blaen Cynon contains an extensive complex of damp pastures and heaths supporting the largest metapopulation of marsh fritillary *Euphydryas aurinia* on the southern edge of the Brecon Beacons National Park. The marsh fritillary butterfly *Euphydryas aurinia* is found in a range of habitats in which its larval food plant, devil's-bit scabious *Succisa pratensis*, occurs. Marsh fritillaries are essentially grassland butterflies in the UK, and although populations may occur occasionally on wet heath, bog margins and woodland clearings, most colonies are found in damp acidic or dry calcareous grasslands. Populations of marsh fritillary vary greatly in size from year to year, and, at least in part, this is related to cycles of attack from parasitic wasps. Adults tend to be sedentary and remain in a series of linked metapopulations, forming numerous temporary sub-populations, which frequently die out and re-colonise. Blaen Cynon also supports a range of habitats. Marshy grassland, and flush and spring are of particular importance as they provide habitat for the marsh fritillary. Also present are areas of raised bog, species-rich neutral grassland, acid grassland and semi-natural broadleaved woodland.
Qualifying Features	**Annex II species that are a primary reason for the selection of this site:** *Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia*
Conservation Objectives	Vision for the site: The site is part of a wider area used by a metapopulation of marsh fritillary butterfly. Cors Bryn-y- Gaer SSSI and the nearby Woodland Park and Pontpren SSSI will contribute towards supporting the metapopulation of marsh fritillary in the Penderyn/Hirwaun area. These two sites comprise the Blaen Cynon Special Area of Conservation (SAC). The various habitats within the SAC will be managed for the benefit of this butterfly. Wet grassland covers at least 50% of the total site area. The wet grassland is comprised of acid flush and marshy grassland. Small areas of the site should consist of habitats associated with the wet grassland, including wet heath, bog pools and swamp. The following plants are common throughout most of the marshy grassland: purple moor-grass, sharpflowered rush, soft rush, tormentil and devil's-bit scabious. Grasses such as sweet vernal-grass and heath grass should be more prominent in some areas. The following plants are common in most of the acid flush vegetation: bog mosses, sharp-flowered rush, purple moor-grass, heath wood-rush and tormentil. Further areas of acid flush should include abundant carnation sedge and frequent bog asphodel. Lowland bog occupies a minimum of 15% of the total site area and is characterised by a carpet of bog moss species, with deergrass, hare's-tail cottongrass and round leaved sundew. In the wettest areas, common cottongrass is more frequent, whilst in slightly drier areas cross-leaved heath becomes more abundant and there is a wider range of bog moss species. Scrub species such as

	willow are largely absent from the lowland bog. Areas of particularly wet ground include small bog pools alongside patches of wet heath. The bog pools will be characterised by abundant common cottongrass and scattered bog moss. Species found in the areas of wet heath include cross-leaved heath, deergrass, bilberry and wavy hair-grass. Dry grassland occupies a minimum of 10% of the total site area. The dry grassland comprises both neutral and acid grassland. The remaining areas of the more free-draining land on the SSSI should be permanent pasture. Scattered scrub and existing field boundaries should be maintained at their current extent. The neutral grassland is characterised by a range of species including common bent, red fescue, common knapweed and common bird's-foot trefoil. In places, this grades into more acid grassland vegetation with species such as heath bedstraw, tormentil and devil's-bit scabious. Woodland and hedges at Woodland Park and Pontpren SSSI may provide some shelter for the marsh fritillary. However, scrub encroachment onto the wet grassland and bog habitats in particular is a continuing problem and scrub control will be necessary from time to time to ensure that there is no net loss of marsh fritillary habitat and other habitats of interest. The woodland cover of this SSSI is about 15% of the site area, consisting mainly of alder and willow in wetter areas, and oak and downy birch where the ground is drier. The drainage and hydrological conditions on the site should be maintained to favour the habitats that support the marsh fritillary and their management. **Annex II species that are a primary reason for the selection of this site:** *Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ▪ The site will contribute towards supporting a sustainable metapopulation of the marsh fritillary in the Penderyn/Hirwaun area. This will require a minimum of 50ha of suitable habitat, of which at least 10ha must be in good condition, although not all is expected to be found within the SAC. Some will be on nearby land within a radius of about 2km. ▪ The population will be viable in the long term, acknowledging the extreme population fluctuations of the species. ▪ A minimum of 30% of the total site area will be grassland suitable for supporting marsh fritillary. (As the total area of the SAC is 66.62 ha, 30% represents approximately 20 ha.) ▪ At least 40% of the suitable habitat (approximately 8 ha) must be in optimal condition for breeding marsh fritillary. ▪ Suitable marsh fritillary habitat is defined as stands of grassland where *Succisa pratensis* is present and where scrub more than 1 metre tall covers no more than 10% of the stands ▪ Optimal marsh fritillary breeding habitat will be characterised by grassland where the vegetation height is 10-20 cm, with abundant purple moor-grass *Molinia caerulea*, frequent "large-leaved" devil's-bit scabious

	Succisa pratensis suitable for marsh fritillaries to lay their eggs and only occasional scrub. In peak years, a density of 200 larval webs per hectare of optimal habitat will be found across the site. (Fowles 20042).
Component SSSIs	The plan area has been divided into 13 management units over two SSSI areas to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based primarily tenure, with reference to features and land management requirements.
Key Environmental Conditions (factors that maintain site integrity)	Protection from development: The site lies within the South Wales Coalfield on the fringes of an urban area, designated as cSAC, which will help control threats from housing, opencast or other industrial development and pollution arising from such development in the immediate vicinity. Grazing Management: Without an appropriate grazing regime, the grassland will become rank and eventually turn to scrub and woodland. Conversely, overgrazing, or grazing by inappropriate stock (particularly sheep) will also lead to unwanted changes in species composition, through selective grazing, increased nutrient inputs and poaching. Balancing grazing is the single most important issue in the management of this site. There is now considerable experience in managing sites for marsh fritillaries in Wales, and the needs of the species are now reasonably well understood. Scrub encroachment is an issue, particularly on some wet grassland areas. A programme of scrub control is currently (2008) being undertaken, but it is likely that even with the ideal grazing management, a more or less continuous programme of scrub control will be required at this site. It is clear from aerial photographs and from discussions with landowners, that many areas that are currently covered in alder and willow woodland were formerly wet pasture. Therefore a long-term aim would be to investigate returning some of this to wet pasture that would likely increase the availability of marsh fritillary habitat. Parts of Woodland Park and Pontpren, notably units 3 and 4 have been subject to improvement in preparation for tree planting, including draining, planting with trees and use of fertiliser. These areas have a programme of scrub removal and cattle grazing in place, to restore the grassland to a condition where it can be used by marsh fritillaries. Some drains have been blocked, to restore the hydrology of the site. There are no known off-site factors, such as pollution, that are affecting the marsh fritillary to any significant extent, although there is still much industry in the locality. The two overwhelming issues of grazing and scrub encroachment would probably obscure any off-site issues. As management of the site improves off-site factors may become more apparent. Owner/occupier objectives: The owners/occupiers of the land typically have an interest in securing some financial/agricultural benefit from the land. This return could be optimised by the agricultural improvement of the land, e.g. by installing new drainage, fertiliser application, or re-seeding; however these operations would cause significant long-term damage to the

	marsh fritillary habitat, namely the marshy grassland. Additionally unimproved marshy grasslands that are waterlogged for much of the year are difficult to manage for many landowners, possibly resulting in a mixture of over and under grazing, with a tendency for scrub to spread. Because of the wet nature of some of the ground, some landowners may be reluctant to graze large stock. This factor will be controlled through management agreements and the SSSI legislation. An operational limit is not required. Weather conditions : Weather conditions have an effect on the breeding success of the marsh fritillary. In particular, poor weather conditions during the adult flight period will reduce opportunities for mating, egg-laying and dispersal from core areas. Weather conditions during early spring influence the rate of larval development of the marsh fritillary and the effects of the parasitic wasp (see below). This site is situated in an area of relatively high rainfall, which will have a large influence on the population dynamics of the marsh fritillary. This factor is outside the influence of the site manager and an operational limit is not required.
SAC Condition Assessment	♣ *Marsh fritillary butterfly Euphydryas (Eurodryas, Hypodryas) aurinia:* ***Unfavourable***
Vulnerabilities (includes existing pressures and trends)	Dependent on Management: The plant communities of Blaen Cynon are dependent on maintenance of the hydrological regime and the continuation of traditional agricultural management. Agricultural Processes: The owners/occupiers of the land typically have an interest in securing some financial/agricultural benefit from the land. This return could be optimised by the agricultural improvement of the land, e.g. by installing new drainage, fertiliser application, or re-seeding; however these operations would cause significant long-term damage to the marsh fritillary habitat, namely the marshy grassland. Grazing and Scrub encroachment: The marsh fritillary butterfly population is threatened in some parts of the site by a lack of grazing, leading to scrub encroachment. Inappropriate tree planting: The marsh fritillary butterfly population is threatened in some parts of the site by inappropriate tree planting. Burning: Burning for agricultural purposes is also a major threat. Parasites: The larvae of marsh fritillaries can be parasitised by species of braconid wasp of the*Cotesia* genus. The parasites can have good years and infect a large number of larval webs, causing a crash in the subsequent adult population of marsh fritillary. This factor is outside the influence of the site manager; and an operational limit is not required.

	Weather conditions : Weather conditions have an effect on the breeding success of the marsh fritillary. In particular, poor weather conditions during the adult flight period will reduce opportunities for mating, egg-laying and dispersal from core areas.
Landowner/ Management Responsibility	Cors Bryn y Gaer: Unit 1 of Cors Bryn-y-Gaer has been horse grazed in the past, with drier more agriculturally improved areas being cut for hay. Unit 2 has been horse grazed in the past, but ownership has recently changed (2007), and there is no grazing now. Unit 3 and 4 are managed as one, since there is no fence between them. In the past, they have been managed with sheep and cattle grazing. There was then a two year period of no grazing, before cattle returned to the site in 2006. Unit 5 has been horse grazed for some years, and this management continues. Unit 6 receives little management, although it has been horse grazed in the past. Woodland Park and Pontpren: Unit 1 of Woodland Park and Pontpren was grazed mainly by sheep until about 2004. However ownership has recently changed. Unit 2 is managed under a s15 agreement with CCW that has involved reintroducing cattle grazing and the cutting of scrub. Unit 3 and 4 are owned and managed by CCW. In c.1995, they were ploughed, drained and planted with broadleaved trees and conifers. CCW now removed many of these trees, in-filled some ditches and reintroduced cattle grazing in order to restore the marsh fritillary habitat. It could take many decades before the habitat is restored to anything like what it would have been prior to the tree planting and therefore management of Units 3 & 4 will primarily be aimed at providing suitable habitat and, in particular, abundant devil's-bit scabious, for the breeding marsh fritillary, rather than aiming to maintain species-rich habitat (note: - for monitoring of SSSI features these previously damaged habitats will not be included in the marshy grassland feature etc. However, the long-term aim would be look at ways of restoring the marshy grassland and other damaged habitats to a more species-rich natural state. Unit 5 is grazed by sheep and cattle, but there is a problem with scrub encroachment and removal of some of this is planned for the near future. Units 6 and 7 have mostly been managed with pony grazing with some scrub clearance aimed at improving connectivity between the fields and creating more habitats for the marsh fritillary.
HRA/AA Studies undertaken that address this site	HRA Screening of the Rhondda Cynon Taff County Borough Council's Local Development Plan (2006-2021): January 2010 - http://www.rhondda-cynon-taf.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb18-habitatsregulationsassessmentappropriateass.pdf

Site Name: Brecon Beacons ***Location Grid Ref: SO024211*** ***JNCC Site Code: UK0030096*** ***Size: 269.67 ha*** ***Designation: SAC***	***Habitats Regulations Assessment: Data Proforma***
Site Description	The Brecon Beacons SAC is located to the south of the town of Brecon and the Old Red Sandstone cliffs and escarpment is typical of the upland scenery within the National Park. The site is comprised of 4 different units contained within Brecon Beacons SSSI. Pen y Fan is the highest peak in south Wales. The site is of particular interest for the arctic-alpine plants and plant communities growing on the sandstone rocks and ledges on its precipitous mostly north and east facing cliffs. The escarpments also support stands of dry heath vegetation. Within the SAC boundary the only significant areas of dry heath are found on the steep slopes of the NNR. The heath is largely dominated by single species stands of heather Calluna vulgaris and bilberry Vaccinium myrtillus; although some stands have crowberry Empetrum nigrum. Heather and biberry also grow on the cliff ledges and are sometimes joined by cowberry (Vaccinium vitis-idaea). Here, there is some gradation into the other Annex I habitat types for which this SAC is designated. On the lower slopes, where grazing levels are higher, heath species become less dominant and are replaced by acid grassland. Bracken is locally abundant both on the steeper slopes, where it grows where the soil is slightly deeper, and on the lower slopes where it is sometimes mixed with scrub. Trees, including endemic whitebeams (Sorbus) and shrubs are an important element of the crag vegetation.
Qualifying Features	**Annex I habitats that are a primary reason for selection of this site:** ♣ *Calcareous rocky slopes with chasmophytic vegetation* ♣ *Siliceous rocky slopes with chasmophytic vegetation* **Annex I habitats present as qualifying features, but not primary reasons for site Selection:** ♣ *European dry heaths* ♣ *Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels*
Conservation Objectives	Vision for the Site: The Old Red Sandstone cliffs and screes are composed of acidic and more base-rich sandstone. These rocks provide ideal habitat for a wide range of plants, including lichens, mosses, liverworts and flowering plants. The cliffs, ledges and rocky slopes also provide a grazing free refuge that allows plants like serrated wintergreen, purple saxifrage and endemic hawkweeds to thrive. On ledges evidence of tall, un-grazed vegetation with species like great wood-rush and lady's-mantle is easily visible and flowering during the summer months. Craig Cerrig-gleisiad and Fan Frynach and Y Gyrn support the main areas of dry heath. Mixtures of heather and bilberry are dominant here, along with crowberry, cowberry, mosses and lichens. The heathland has a varied age structure created by grazing, such that there is a

	mosaic young, mature and degenerate heath. Dense patches of bracken are generally absent from these areas and the dominance of purple moor-grass is under control. The area of other habitats of particular interest, such as blanket bog and flushes are stable in the long term, their quality and range of typical species are maintained and the factors that may affect them are under control. For each species of particular interest, the population is stable or increasing and is sustainable in the long term and the factors that affect the species or its habitat are under control. The special geological features and landforms are available for continuing study. **Annex I habitats that are a primary reason for selection of this site:** ♣ *Calcareous rocky slopes with chasmophytic vegetation* <u>Vision for this feature:</u> ♣ The base-rich sandstone cliffs, including crevices, scree and associated patches of thin soil remains free from disturbance and support typical plants, including mosses and liverworts. ♣ A variety of rare and scarce plants thrive in these areas, including purple saxifrage, green spleenwort, Oeder's apple-moss, lesser rough earwort and several rare hawkweeds. ♣ Populations of these species are sufficiently large and widespread to be sustained into the future (currently some populations may be critically low). ♣ All factors affecting the achievement of the above conditions are under control. **Annex I habitats that are a primary reason for selection of this site:** ♣ *Siliceous rocky slopes with chasmophytic vegetation* <u>Vision for this feature:</u> ♣ The acidic sandstone rocks, including crevices and scree, remain free from disturbance to and support typical plants, including mosses, ferns and lichens. ♣ A variety of rare and scarce plants thrive in these areas, including fir clubmoss, dwarf willow, and greater streak-moss. ♣ Populations of these species are sufficiently large and widespread to be sustained into the future. ♣ All factors affecting the achievement of the above conditions are under control. **Annex I habitats present as qualifying features, but not primary reasons for site Selection:** ♣ *European dry heaths*

	Vision for this feature: ♣ The extent, quality and diversity of heath vegetation are maintained and, where possible, degraded heath is restored to good condition. ♣ The main heathland areas within the SAC and SSSI have a varied age structure with a mosaic of young heath, mature heath and degenerate heath. ♣ All factors affecting the achievement of these conditions are under control. **Annex I habitats present as qualifying features, but not primary reasons for site Selection:** ♣ *Hydrophilous tall herb fringe communities of plains and montane to alpine levels* Vision for this feature: ♣ The cliff ledges with less acidic soil remain largely free from grazing, such that the typical flowering plants can flourish and flower freely. ♣ Several uncommon plants thrive in these areas, including serrated wintergreen and rare hawkweeds. ♣ The populations of these plants are sufficiently large and widespread to be sustained into the future. ♣ All factors affecting the achievement of the above conditions are under control.
Component SSSIs	Brecon Beacons SSSI is composed of 10 management units of which numbers 1, 4, 8, and 9 comprise to form the Brecon Beacons SAC. ♣ Unit 1 - Craig Cwm Du and Craig Cerrig ♣ Unit 4 - SAC area within Great Forest Common ♣ Unit 8 - SAC cliffs within Brecon Beacons Common ♣ Unit 9 - SAC cliffs within Buckland Manor Common
Key Environmental Conditions (factors that maintain site integrity)	Grazing: Some areas under-grazed while others are over-grazed. ♣ Upper limit: 0.2 livestock units/ha/year (One livestock unit is equivalent to 1 cow or horse. A sheep (with lamb) is equivalent to 0.15 livestock units). ♣ Lower limit: Sufficient to prevent the development of scrub within heathland/grassland of conservation interest and/ or spread of bracken and ivy. Air Quality: Ensure that no critical loads for acidic and nitrogen deposition are exceeded. Erosion: o noticeable impacts from human or livestock induced erosion in units 1, (2), 4, (7), 8, 9, (10). Walkers and livestock cause erosion of paths along the cliffs resulting in rock and soil being washed down from eroded areas on the cliffs above.

	Rock Climbing: No rock climbing in units 1, (2), (3), 4, (7), 8, 9, (10) without agreement. Although most of the rocks at this site are too soft or unstable for climbing, intensive use can dislodge plants and disturb breeding birds. These impacts may be avoided if climbing is subject to specific agreements, which include a code of conduct.
SAC Condition Assessment	♣ *Calcareous rocky slopes with chasmophytic vegetation.* ***Un-favourable*** ♣ *Siliceous rocky slopes with chasmophytic vegetation.* ***Un-favourable*** ♣ *European dry heaths* ***Un-favourable*** ♣ *Hydrophilous tall herb fringe communities of plains and montane to alpine levels.* ***Un-favourable***
Vulnerabilities (includes existing pressures and trends)	Craig Cerrig-gleisiad and Craig Cwm-du: These areas are a National Nature Reserve (NNR); the management regime is light grazing. Almost all of the heathland is contained in these sections, and is in good condition. Public pressure from ramblers and climbers is not a significant problem. Pen y Fan, Blaen Taf crags and Craig y Fro: These areas are on common land where grazing has been at high levels for the past 30-40 years. The SAC interests here are largely confined to cliffs and crags inaccessible to sheep. The potential for loss of habitat to grazing is therefore small. If grazing were reduced, there would probably be a small extension in the extent of the chasmophytic vegetation of both calcareous and silicious rocky slopes, due to reducion in sheep dunging, grazing and rubbing of the smaller accessible outcrops. Due to the high palatability of the hydrophilous tall herb fringe communities, a very large reduction, or exclusion, of grazing would be required to obtain extensions in habitat area. The European dry heath is very limited in extent on this part of the site and unlikely to extend in area with reduced grazing. Erosion: Grazing pressure, combined with human trampling, along the Pen y Fan ridge has caused localised soil erosion. In places, soil and rock debris are washing down the steeper faces and burying some colonies of arctic-alpine plants. Some progress has been made in recent years in laying a hard surface on the summit ridge path on Pen y Fan. Air pollution: Acidification of rain and soils, due to atmospheric pollution, and nutrient enrichment (especially increased nitrogen and phosphorus), through a combination of atmospheric pollution, excessive dunging/urination in areas where stock preferentially graze and other inputs from diffuse sources. Mosses, liverworts and lichens are particularly vulnerable to pollution from atmospheric sources. Much of this atmospheric pollution comes from distant, diffuse sources, such as traffic and domestic emissions, but some can be attributed to large point sources, such as major power stations or

	industrial processes. The Environment Agency has reported that critical loads for air pollutants are still being exceeded, which is likely to be having an adverse impact on the vegetation. <u>Grazing pressure:</u> Many of the interesting plants on the cliffs are intolerant of grazing and are confined to areas less accessible to stock. Reduced grazing levels on the main escarpment would allow these plants to spread out from their craggy refuges. Sheep tend to graze any lime-rich grassland preferentially at certain times of year and can cause localised damage in these areas, but there are some areas they will never be able to access on vertical or unstable slopes. However, some light grazing of slopes may help to prevent encroachment by coarse vegetation, trees and scrub. Those areas currently un-grazed are not likely to be accessible to stock types currently grazing the land; therefore core areas of the feature are currently safe. Potential changes in the type of grazing animals, such as goats, which would be better suited to climbing, will be monitored and appropriate action taken to remove them. <u>Recreational pressure from walkers and rock climbers:</u> This along with livestock can cause erosion of paths along the cliffs resulting in rock and soil being washed down from eroded areas on the cliffs above.
Landowner/ Management Responsibility	♣ Unit 1 - SAC area within the CCW-owned land ♣ Unit 4 - SAC area within Great Forest common land (CL50 Brecknock) ♣ Unit 8 - SAC area within National Trust common land (Brecon Beacons CL56 Brecknock) ♣ Unit 9 - SAC area within Buckland Manor common (CL62 Brecknock)
HRA/AA Studies undertaken that address this site	HRA Screening of the Brecon Beacons National Park Local Development Plan (2007-2022) May 2009 http://www.breconbeacons.org/the-authority/planning/strategy-and-policy/npmp/hra-annexs/hra-main-document-2009/attachment_download/file

Site Name: Coedydd Nedd a Mellte ***Location Grid Ref: SN919093*** ***JNCC Site Code: UK0030141*** ***Size: 378.18 ha*** ***Designation: SAC***	***Habitats Regulations Assessment: Data Proforma***
Site Description	Dyffrynoedd Nedd a Mellte, a Moel Penderyn SSSI: This site includes the wooded valleys of the rivers Nedd, Mellte, Pyrddin and Sychryd, and their tributaries above Pontneddfechan, as they pass through a Millstone Grit and limestone plateau, and Moel Penderyn, which lie to the east. The plateau lies at about 300 m, the rivers having eroded deep, narrow valleys with gorges, cliffs, block screes and waterfalls. There is an extensive and diverse range of semi-natural woodland types, important populations of flowering plants and outstanding assemblages of mosses, liverworts and lichens. The site includes a range of geological features. These include exposures at Moel Penderyn, Craig y Ddinas and Bwa Maen and geomorphological features within parts of the valleys of the Hepste and Mellte. Blaen Nedd SSSI: Blaen Nedd is situated in the upper valley of the Nedd Fechan, approximately 1km west of the village of Ystradfellte. It consists of a series of contiguous enclosures rising eastwards and north-eastwards from the river towards the lower flanks of Fan Nedd. The site supports a wide variety of habitat types including oak and ash woodland, neutral grassland, calcareous grassland, limestone pavement, marshy grassland and wet dwarf-shrub heath. Geological features include a cave system and associated karst (classic limestone landscape) surface features. The SAC habitats are spread across both the above SSSI. The SAC oak woodland habitat is mostly confined to the river valleys where the underlying geology is mainly carboniferous sandstones and coal measures. The SAC ash woodland is less widespread, occurring mainly on the more base rich sandstones, particularly along tops of crags, and on limestone in the north and south.
Qualifying Features	**Annex I habitats that are a primary reason for selection for this site:** ♣ *Old sessile oak woods with Ilex and Blechnum in the British Isles* **Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:** ♣ *Tilio-Acerion forests of slopes, screes and ravines*

Conservation Objectives	Vision for the Site: Dyffrynoedd Nedd a Mellte, a Moel Penderyn SSSI: Three quarters of the site is covered by woodland, which includes areas of scrub and glades. Large parts of the canopy are dominated by oak and birch, with ash woodland in lime-rich areas and alder on damper soils. The woodland has trees of all ages, with a scattering of standing and fallen deadwood. Regeneration of these tree species is sufficient to maintain the woodland cover in the long term. Gaps in the canopy collectively occupy a significant but small proportion of the total site area.In most areas of oak woodland there is an under-storey of hazel, hawthorn and rowan. The ground flora is diverse, with a wide range of plants, reflecting the varying soil conditions. Large areas are dominated by wavy hair-grass, bilberry and mosses and sometimes by purple moor-grass. Ferns are frequent through most of the woodland and wood sorrel and bluebell are common in some areas. On lime-rich soils, ash is the dominant tree species and in places there is also small-leaved lime. Hazel is generally abundant in the shrub layer, with false brome, dog's mercury, enchanter's-nightshade and hart's-tongue fern common on the woodland floor. Alder woodland occurs on flatter areas of valley floor and some has a ground layer of sphagnum moss. Marsh hawk's-beard is found in wet flushes on the valley sides. The river valleys and waterfalls are generally well shaded and constantly humid. These areas support a rich plant flora that clothes riverside rocks and cliffs and trunks of trees. Species include wood fescue, a wide variety of ferns such as hay-scented buckler-fern, beech fern, royal fern, green spleenwort, Tunbridge filmy-fern and Wilson's filmy-fern. There is a great variety of mosses and liverworts. The ground layer often has a mossy mat with greater fork-moss, little shaggy-moss and straggling pouch wort and, in the most humid places, scarce turf-moss. Boulders and oak trunks are covered in western earwort, wood-rust plasters fallen tree trunks and the diminutive Heller's notch wort and autumn flap wort grow on oak bark and decaying logs. Brown's four-tooth moss and horsehair threadworm occur in damp crevices in sandstone rock and patches of rock-bristle mosses can be found with a suite of other lime-loving species on damp limestone rocks. Mosses and liverworts are also prominent in rivers and streams, with boulders and waterfalls covered in species like rusty feather-moss and fox-tail feather-moss, and sometimes Hartmann's grimier, river pocket-moss, beck pocket-moss and Hitchin's holly wort. Some crags have a powdering of the bright yellow lichen Chrysothrix chlorina, with lichens generally draping branches and trunks of less shaded trees. Trees and dead wood in these humid areas provide a specialised habitat for many plants and insects. The riverbanks are largely unmanaged and human disturbance is minimal. The network of footpaths is well maintained and recreational activities well managed. There are no invasive alien plants such as rhododendron, Himalayan balsam and Japanese knotweed and conifer saplings spreading from nearby plantations are regularly removed. Open areas are variously dominated by rushes, purple moor-grass, sheep's-fescue, deergrass and cross-leaved heath. In terms of its geomorphological interest, the site demonstrates the natural processes that have affected the evolution of the landscape. Sections of the Afon Mellte and Afon Hepste show the effects of faulting on the evolution of waterfalls. Important rock exposures illustrate whole sequences of the Namurian including Basal Grits and

	Middle Shales and rocks of the oldest Coal Measures. Carboniferous rocks at Moel Penderyn, Craig Y Ddinas and along the Afon Sychryd show folds and fractures associated with the Variscan mountain chain (which includes the hills of Devon and Cornwall and mountains of eastern Europe). Blaen Nedd SSSI: The habitat features listed should in general not decrease in area and should not decline in quality. Ash woodland along the Nedd Fechan has associated trees and shrubs such as hazel and rowan and the ground flora includes typical woodland species such as false brome, creeping soft-grass, herb-Robert, enchanter's nightshade and lady-fern. Wooded areas of limestone pavement continue to be actively managed, with some coppicing in places. Oak-dominated woodland along the Nedd Fechan has associated trees and shrubs such as downy birch, hawthorn and hazel, with a ground flora of grasses such as common bent, creeping soft-grass, sweet vernal-grass and wavy hair-grass and herbs including bluebell and wood-sorrel. Small stands of trees and scrub away from the main woodland blocks are maintained as these habitats. The dry neutral grassland (hay-meadow and pasture) has a range of grasses such as common bent, sweet vernal-grass and crested dog's-tail and herbs including common knapweed, yellow-rattle, great burnet, rough hawkbit, greater butterfly orchid and common spotted-orchid. Plants indicative of disturbance and nutrient enrichment, such as perennial rye-grass, white clover, docks and creeping thistle, and coarse grasses, such as cock's-foot, are not prominent in the sward. Calcareous grassland has a range of typical species such as sheep's-fescue, wild thyme, salad burnet, common rock-rose, limestone bedstraw, mountain everlasting and moonwort. Where the grassland is more open and rocky, species such as carline thistle and soft-leaved sedge occur. Species indicative of disturbance or enrichment, such as creeping thistle, perennial rye-grass and white clover are not prominent in the sward. Areas of open limestone pavement and screes, rock outcrops and quarries should be maintained, mainly in association with the calcareous grassland. These areas support species such as lily-of-the valley, globe-flower, limestone fern, mossy saxifrage, small scabious and narrow-leaved bitter-cress. The marshy grassland in general has a high cover of purple moor-grass or rushes. Some of this is species-rich with a prominence of plants such as meadow thistle, tawny sedge, flea sedge, devil's-bit scabious and bog pimpernel. Purple moor-grass and rushes are not overwhelmingly dominant at the expense of other grasses, sedges, herbs and bryophytes. Species indicative of disturbance and nutrient enrichment, such as creeping buttercup and white clover are uncommon, invasive trees and shrubs should are rare or absent and bare ground is kept to a minimum. Wet heath has a range of typical species including cross-leaved heath, heather, deer-grass, bilberry and lichens. Purple moor-grass or rushes are not dominant at the expense of other heathland species and poaching is kept to a minimum. Other habitats occupy about 30% of the site. Within this mixture, the best quality acid grassland, dry heath and flush are of good floristic quality. The main remaining habitats are bracken, mat-grass dominated acid grassland and semi-improved acid grassland, together with some semi-improved neutral grassland that is mainly associated with the more species-rich hay-meadows.There is no diminution of the geological evidence for the formation of the caves, provided underground by the cave passage morphology or included sediments and cave decorations. There is no blocking or in-filling of surface features, such as

springs, sink holes, dolines or emergences or leakage into the cave system of materials likely to damage the interests.

Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:

- *Tilio-Acerion forests of slopes, screes and ravines*

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- Upland ash woodland will occupy at least 18 ha of the total site area.
- The canopy should be predominantly ash and the following trees will be common in the Woodland
- Ferns will be common ground flora species.
- Although they may be present in the canopy in small quantities, sycamore and beech should not become dominant at the expense of ash.
- Introduced invasive species will be absent and any conifers seeding in from adjoining plantations will be removed whilst at the seedling/sapling stage.
- Damage to the ground flora and soil erosion due to public pressure will be at a minimum.
- All factors affecting the achievement of these conditions are under control

Annex I habitats that are a primary reason for selection for this site:

- *Old sessile oak woods with Ilex and Blechnum in the British Isles*

The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied:

- Sessile oak woodland will occupy at least 175 ha of the total site area.
- The canopy should be predominantly oak and locally native trees will be common in the woodland.
- Ferns will be common ground flora species.
- Bryophytes will continue to be abundant and the bryophyte flora will continue to include those western/Atlantic species that mark out this woodland type. A suite of rarer species and species at the edge of their geographical range will continue to be present.
- Heath species such as bilberry and common heather Calluna vulgaris will be common in some areas.
- Introduced invasive species such as rhododendron will be absent and any conifers seeding in from adjoining plantations will be removed whilst at the seedling/sapling stage.
- Damage to the ground flora and soil erosion due to public pressure will be at a minimum.
- All factors affecting the achievement of these conditions are under control.

Component SSSIs	The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been based on mainly on tenure and the presence of habitat and or geological interest. The Component SSSI's have been divided into two areas, the Blaen Nedd SSSI which contains 13 management units and the Dyffrynoedd Nedd a Mellte, a Moel Penderyn SSSI which makes up the remaining 15 management units.
Key Environmental Conditions (factors that maintain site integrity)	**Annex I habitats present as a qualifying feature, but not a primary reason for selection of this site:** ♣ *Tilio-Acerion forests of slopes, screes and ravines* <u>General Maintenance:</u> Much of Unit DNM16 has now been fenced under a management agreement, however a sufficient under-storey will take time to develop and some thinning may be necessary to remove some of the non-native species. Similar fencing has occurred in Units BN7 & BN9, with some thinning and coppicing initiated to reduce the frequency of sycamore. A management plan covering the wider 'waterfalls area' is being progressed (2008) by the BBNPA, FC and CCW, which amongst other things will be addressing issues arising from increasing numbers of visitors in the SAC and supporting SSSI. **Annex I habitats that are a primary reason for selection for this site:** ♣ *Old sessile oak woods with Ilex and Blechnum in the British Isles* <u>General Maintenance:</u> Units DNM2, DNM11, DNM16 are currently (2008) under management agreement but a sufficient under-storey will take time to develop. Some thinning may be necessary to remove some of the non-native species in Unit DNM2. Units DNM14 & DNM15 are largely unmanaged and ungrazed and an under-storey should develop in time. Some thinning of non-native trees may be necessary. Units DNM4 & DNM8 are largely fenced from grazing, although trespassing sheep do enter the wood from time to time, and an under-storey should develop in time. Some thinning of non-native trees may be required. A combination of agri-environment schemes and management agreements offer the best mechanism for securing favourable management in these areas.
SAC Condition Assessment	♣ *Tilio-Acerion forests of slopes, screes and ravines: Unfavourable* ♣ *<u>Old sessile oak woods with Ilex and Blechnum in the British Isles:</u>* ***<u>Unfavourable</u>***

Vulnerabilities (includes existing pressures and trends)	Grazing: The majority of the woodland is owned by the Forestry Commission and is un-grazed. However, stray livestock still gain access in places and could pose a threat to tree and shrub regeneration. Fencing against livestock would certainly be desirable in the areas currently subject to agricultural use Competition: Stands of planted conifers, beech and sycamore within and adjacent to the site are seeding into semi-natural woodland communities in places. The Forestry Commission has agreed to remove most of these species from the site itself, but seedlings may still invade from other areas and an on-going control programme should be considered. Tourism and Recreation: The area contains waterfalls which are a great attraction to the public and significant erosion damage has been caused by pedestrians, horses and bicycles. An on-going path repair programme has only been partially successful in addressing this problem and further restrictions on public access should be considered. Given the level of access to the site and surrounding plantations, there could be significant fire risk in prolonged dry periods. Pollution: Airborne acid and nutrient deposition may also be a problem, particularly for epiphytic lichens.
Landowner/ Management Responsibility	Over the past 10 years many small privately owned areas have been fenced and grazing excluded under S15 or Tir Gofal agreements. A large proportion of the site is owned by the Forestry Commission (FC), with significant areas owned by the Brecon Beacons National Park Authority (BBNPA) and National Trust (NT). Most of the woodland is subject to non-intervention management, but some small areas of ash and hazel are coppiced. The FC has declared their land as Open Access land. **Blaen Nedd SSSI** ♣ Unit BN1 - geological interest only (non-SAC) ♣ Unit BN2 - geological interest only (non-SAC) ♣ Unit BN3 - geological interest only (non-SAC) ♣ Unit BN4 - road - apart from a wide verge with habitat this unit is of geological interest only (non-SAC) ♣ Unit BN5 - sinkhole with trees (non-SAC) ♣ Unit BN6 - common land with above ground non-SAC habitats and geology ♣ Unit BN7 - supports geological and biological features and lies within SAC ♣ Unit BN8 - supports geological and biological features and lies within SAC ♣ Unit BN9 - supports geological and biological features and lies within SAC ♣ Unit BN10 - supports non-SAC habitats ♣ Unit BN11 - supports non-SAC habitats and geology ♣ Unit BN12 - supports non-SAC habitats and geology

	♣ Unit BN13 - supports non-SAC habitats and geology **Dyffrynoedd Nedd a Mellte, a Moel Penderyn SSSI** All units apart from Unit DNM1 lie within the SAC. Units DNM2, DNM6, DNM7, DNM9, DNM10, DNM11, DNM12, and DNM14 are privately owned and some are covered by management agreements. ♣ Unit DNM1 - Moel Penderyn part of the SSSI - mainly of geological interest but some grassland and species of note (non-SAC). ♣ Unit DNM3 - lies within Neath Port Talbot and in CCWs West Region. ♣ Unit DNM4 - Forestry Commission land - the main landowners at this SSSI. ♣ Unit DNM5 - lies within Neath Port Talbot and in CCWs West Region. ♣ Unit DNM8 - BBNPA owned land. ♣ Unit DNM13 - Powys CC ♣ Unit DNM15 - various other small parcels of land.
HRA/AA Studies undertaken that address this site	HRA Screening of the Rhondda Cynon Taff County Borough Council"s Local Development Plan (2006-2021): January 2010: http://www.rhondda-cynon-taf.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb18-habitatsregulationsassessmentappropriateass.pdf

Site Name: Cwm Cadlan ***Location Grid Ref: SN961098*** ***JNCC Site Code: UK0013585*** ***Size: 83.93 ha*** ***Designation: SAC***	***Habitats Regulations Assessment: Data Proforma***
Site Description	Cwm Cadlan is situated approximately 1km north-east of the village of Penderyn and about 4km north of Hirwaun, near Aberdare. The site was notified in 2000 and incorporates the former Cwm Cadlan Grasslands SSSI and Glyn-Perfedd Meadow SSSI. The SAC interests are: Cwm Cadlan has the largest recorded example of 'Molinia meadows' (or fen-meadow) in Wales. The typical form of purple moor-grass–meadow thistle (*Molinia caerulea- Cirsium dissectum)* fen-meadow (NVC type M24b) is extensively developed, and there are clearly displayed transitions to a range of associated habitats, including base-rich flush and neutral grassland. Cwm Cadlan supports an outstanding suite of flushed short-sedge mire communities on glacial drift overlying Carboniferous limestone within the valley of the Nant Cadlan on the southern fringe of Brecon Beacons National Park. Communities referable to National Vegetation Classification (NVC) type M10 dioecious sedge–common butterwort *(Carex dioica-Pinguicula vulgaris)* mire occur widely, often in close association with flushed examples of M24 fen-meadow. Characteristic species include common butterwort *Pinguicula vulgaris*, bog pimpernel *Anagallis tenella*, marsh arrowgrass *Triglochin palustris* and the moss *Campylium stellatum*. Other sedge-rich swards are also present which display floristic affinities to both M10 and M24; basiphilous elements of this vegetation include tawny sedge *Carex hostiana*, flea sedge *Carex pulicaris* and quaking-grass *Briza media*. Both these habitats are considered to be 'best areas in the United Kingdom'. Part of the site is owned by CCW and was declared NNR in 2006. The grassland communities, which constitute the SAC features are scattered across the site and occur in most of the management units. Some of the communities present, namely M10, M24 and base-rich sedge community are very close in their floristics, and it is possible that the latter vegetation is derived from one or both of M10 and M24 through some form of agricultural modification (possibly drainage or heavy grazing in the past). It is also possible that some of the fen-meadow is derived from alkaline fen through past drainage. Additional SSSI features include: ♣ Marshy Grassland – this includes all the SAC fen-meadow marshy grassland and other forms of marshy grassland not included in the SAC habitat description. ♣ Unimproved neutral grassland (NVC MG5). ♣ Population of globeflower Trollius europaeus

	The stands of neutral and acidic grassland, which are normally regarded as dry grassland types, generally have constant purple moor-grass, and often grade into wet grassland types. Similarly, at the head of the valley, marshy grassland grades into heathland, thus the site provides fine examples of transition zones between communities. The globeflower population is possibly the largest in south Wales. Globeflower is found scattered across the site, mainly in stands on fen-meadow, alkaline fen and neutral grassland.
Qualifying Features	**Annex I habitats that are a primary reason for selection of this site:** ♣ *Molinia meadows on calcareous, peaty or clayey-siltladen soils (Molinion caeruleae)* ♣ *Alkaline Fen*
Conservation Objectives	Vision for the site: Around half of the site is covered by marshy grassland. The majority of this is species rich fen-meadow with a range of typical plants, including purple moor-grass, sharpflowered rush, quaking-grass, flea sedge, tawny sedge, meadow thistle, devil's-bit scabious, marsh valerian, bog pimpernel and orchids. The remainder of the marshy grassland has a high cover of rushes, purple moor-grass, or tall herbs, such as meadowsweet. Plants indicating disturbance or nutrient enrichment, such as docks, nettles, creeping buttercup and white clover are uncommon or present at low cover, trees and shrubs are no more than scattered, and where bare ground occurs, it is present only in small patches, such as occasional hoof prints. Purple moor-grass and rushes are not overwhelmingly dominant within the fen-meadow areas. About a sixth of the site supports alkaline fen associated with springs and flushes, with a high cover of small sedges, such as carnation sedge, tawny sedge and flea sedges and liverworts and mosses, including greasewort, intermediate hook-moss, yellow starry feather-moss and claw-leaved hook-moss, with a variety of other typical plants including butterwort, marsh arrowgrass, bogbean and marsh lousewort. This habitat is particularly important for populations of many uncommon plant species, including broad-leaved cottongrass, dioecious sedge, long-stalked yellow-sedge, knotted pearlwort and marsh helleborine. Plants indicating disturbance or nutrient enrichment, such as creeping buttercup and white clover are uncommon and there is minimal build-up of dead vegetation. Scattered across the site, on better-drained soils, are small stands of unimproved neutral grassland with grasses such as common bent, red fescue, crested dog's-tail and sweet vernal-grass, and a variety of typical herbs including common bird's- oottrefoil, common knapweed, red clover, rough hawkbit, lady's-mantle and great burnet. The majority of this grassland supports plants adapted to mildly acid or leached soils, including tormentil, devil's-bit scabious and heath-grass, but plants more typical of alkaline soils, such as salad burnet and lady's-mantle species, are locally prominent in places. Plants indicating nutrient enrichment, such as perennial rye-grass) are rare. Scrub and bracken are absent. Other habitats present include acid grassland, dominated by bent grasses, sheep'sfescue and heath bedstraw, acidic flushes with frequent soft-rush, small sedges and bog-moss, and wet heath with deer-grass, cross-leaved heath, heather and bilberry. The wet heath mainly occurs at the head of the valley.

	Annex I habitats that are a primary reason for selection of this site: ♣ *Molinia meadows on calcareous, peaty or clayey-siltladen soils (Molinion caeruleae)* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ♣ Fen-meadow will occupy at least 26 ha of a total area of marshy grassland habitat which itself will cover at least 42 ha. ♣ The remainder of the site will mainly consist of other semi-natural habitat, including alkaline fen. ♣ Typical fen-meadow plants will be common. ♣ Plants indicating agricultural modification or alteration to hydrology and drying of soils will be absent or present at only low cover. ♣ Although rushes are frequent, the more bulky species will not exceed 33% cover. ♣ Bare ground will generally not exceed 5% cover and vegetation litter 25%. ♣ Dense scrub will be largely absent from the fen-meadow, but it is probably desirable for invertebrates and birds to have a sparse scattering of shrubs or trees. ♣ All factors affecting the achievement of these conditions are under control. **Annex I habitats that are a primary reason for selection of this site:** ♣ *Alkaline Fen* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ♣ Alkaline Fen will occupy about 11 ha or more. ♣ The remainder of the site will mainly consist of other semi-natural habitat including fenmeadow. ♣ Typical alkaline fen plants will be common. ♣ Plants indicating agricultural modification or alteration of hydrology and drying of soils will be absent or present only at low cover. ♣ Although rushes are frequent, the more bulky species will not exceed 33% cover. ♣ Bare ground will generally not exceed 5% cover and vegetation litter 10 %. ♣ Scrub species will be largely absent from the alkaline fen. ♣ At selected springheads, water should flow in all but the most severe drought conditions. ♣ All factors affecting the achievement of these conditions are under control.

Component SSSIs	The plan area has been divided into 10 management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have largely been based on tenure and management.
Key Environmental Conditions (factors that maintain site integrity)	**Annex I habitats that are a primary reason for selection of this site:** ♣ *Molinia meadows on calcareous, peaty or clayey-siltladen soils (Molinion caeruleae)* <u>Grazing:</u> The fen-meadow is mixed in with other marshy grassland and mire types, but each management unit is subjected to one prescription (excepting those areas that are mown for hay). Management should focus on maintaining or restoring the condition of the fen-meadow and therefore the condition of the remaining areas of marshy grassland will be of secondary importance, but it is likely that if management is suitable for the fen-meadow it should also benefit most other forms of marshy grassland. Maintaining or restoring the marshy grassland should be attainable through the implementation of the present grazing regime and scrub control, with cattle producing the best sward structure. The site has been managed under a relatively light grazing regime in recent years. The present management is considered to be generally acceptable for recovery of modified stands in the long term, and site management will be reviewed periodically. Stocking rates should be guided by the values listed in the Lowland Grassland Handbook. Some grazing earlier in the year and mowing to remove the ranker vegetation should help to encourage grazing in those areas of ranker grassland, control scrub development and reduce the buildup of any litter. Grazing levels need monitoring and management agreements adjusted if required. Monitoring structural elements (bare ground, litter) will identify any problems with the intensity of grazing management. Any excessive grazing pressure would be expected to increase the frequency and cover of bare ground and agricultural species. These are all covered by attributes in the feature objectives. Stocking levels are dependent on the growth of vegetation, which may vary from year to year, but the agreed management policy allows for this. Cessation of cattle farming could affect the vegetation, as sheep are more selective grazers. <u>Control of nutrient inputs:</u> There has been concern about fertilizer run-off from some adjacent improved fields causing localised nutrient enrichment. Any effects from agricultural run-off from adjacent fields will be identified through monitoring the quality of the vegetation under the feature objectives, looking for increases in the cover of perennial ryegrass and white clover and other indicator plants and reductions in the frequency of sedges and other plants of value. Management agreements on adjacent land will partly address this problem.

	Scrub encroachment: Scrub developing within the areas of marshy grassland will on the whole be controlled, although the presence of a few scattered scrub and trees will benefit invertebrates and birds. The marshy grassland areas could be increased beyond the current extent by cutting back the scrub edges and is something that needs to be kept under review, should opportunities arise. The established stands of alder and willow woodland should not be viewed unfavourably as they lend structure to the site and also provides habitat for invertebrates and birds, with the ground vegetation also containing plant species of note (e.g. meadow saxifrage) and the trees themselves supporting good moss and liverwort communities and uncommon lichens. In addition, some stands afford a refuge for colonies of globeflower. However, woodland and scrub should not encroach further into the unimproved grassland, in particular the communities of highest conservation value (alkaline fen, fen meadow and neutral grassland). Drainage: The networks of ditches throughout the SSSI have obviously affected the hydrology and vegetation. These ditches should be allowed to infill naturally (as some have already). Where possible, active restoration of the hydrology should be considered, although this may be difficult in some areas as there would be conflict with the monitoring associated with the quarrying activities. Should dewatering of Penderyn quarry affect the hydrology of the SSSI and/or if the recent run of very dry summers in which watercourses have dried-up continue, then floristic changes are likely to occur. Other marshy grassland: Non-SAC marshy grassland mainly comprises rush and purple moor-grass dominated vegetation and tall-herb fen. Management the SAC features should ensure that the non-SAC marshy grassland is kept in favourable condition. There may be a need from time to time to cut rushes where they have thickened up. **Annex I habitats that are a primary reason for selection of this site:** ♣ *Alkaline Fen* Grazing: These areas will be subject to the same grazing regime as the marshy grassland (see 5.1 above) because they occur together in the same management units. Therefore it is considered inappropriate to specify specific grazing regimes for this habitat. Structural attributes will help to ensure that this habitat is grazed appropriately, so long as this is compatible with achieving the required condition for the marshy grassland. As the alkaline fen is some of the wettest habitat at the site, damage by overgrazing, e.g. excessive poaching is likely to be readily observed.

	Scrub encroachment: Scrub can be monitored by a simple inspection of the site; in most cases the limits should not be exceeded before those limits for other attributes. This and compliance with the management agreement can be determined while monitoring other attributes. See also 5.1 above. Drainage: See above. Atmospheric deposition: N deposition emanates from point and diffuses sources. Reductions in N emissions from the latter require on-going policy reform and advice at national (Wales and UK) levels. Point source impacts need to be evaluated and minimised through RoC and the planning system. Dust deposition from the quarry should be minimised by standard good working practice. Dust deposition should be monitored by the quarry, and appropriate thresholds sought from the literature. Comparison of the two may reveal the need for modifications to working practice.
SAC Condition Assessment	*Molinia meadows on calcareous, peaty or clayey-siltladen soils (Molinion caeruleae):* ***Unfavourable. No change*** *Alkaline Fen:* ***Unfavourable Recovering.***
Vulnerabilities (includes existing pressures and trends)	Grazing: These grasslands are dependent on the continuance of low intensity agricultural management with no, or minimal, use of agro-chemicals. Where necessary, agreements secure appropriate grazing levels and management. Quarrying: Base enrichment and moisture content are also important factors influencing the ecological character of the vegetation. This enrichment appears to derive from rising groundwater. Quarrying or other operations within the groundwater catchment may influence groundwater movements. The operation of an adjoining quarry is subject to a conditioned planning permission, site investigation and monitoring that will constrain operations in order to safeguard the grassland vegetation. Nutrient inputs: There has been concern about fertilizer run-off from some adjacent improved fields causing localised nutrient enrichment. Any effects from agricultural run-off from adjacent fields will be identified through monitoring the quality of the vegetation under the feature objectives Drainage: The networks of ditches throughout the SSSI have obviously affected the hydrology and vegetation. These ditches should be allowed to infill naturally (as some have already). Where possible, active restoration of the hydrology should be considered.

	Atmospheric Pollution: Dust deposition from the quarry should be minimised by standard good working practice.
Landowner/ Management Responsibility	These fields were traditionally managed as pasture and some as hay-meadow but there has long been a liver fluke problem in this area and there have been past attempts to drain many fields within the SAC - there is an extensive network of drainage ditches within the site. Some of these are slowly infilling, but some vegetation is likely to have been permanently modified by these drains. An extensive system of deep ditches was dug over most of the wet pasture in the National Nature Reserve (Unit 1 - see map below) in 1980/81 under a farm improvement scheme. Over the past 50 years much of the land has been grazed by a mixture of cattle and sheep, although between 1997 and 2003, grazing was mainly by sheep. Under CCW's management, the land has been returned to mainly cattle grazing. The south western-most enclosure (formerly Glynperfydd Meadow SSSI) was in the past cut, on average, every three years using horses, with the last cut in 1976. CCW intend to resume the hay-management in this field in an attempt to encourage the populations of some plant species, which appear to have become scarcer over the past 20 years. The south western-most part of the site (Unit 2) is mainly wet pasture and is currently (2007) grazed by cattle and sheep, with a small area cut for hay. The small area near the quarry (Unit 3) currently (2007) receives little grazing, with scrub encroachment a problem. Some scrub and trees were removed by CCW c.2003. The field was part of a larger enclosure that existed before quarry tipping and the re-routing of a farm access track. These changes appeared to have occurred in 1980 or thereabout, being completed by 1983 when a fence was erected against the track. Unit 4 (see below) receives only occasional grazing by sheep and ponies, currently (2007) some of the vegetation is rather rank. Part of the field was burned c. 2003. A hay crop used to be taken in Unit 5 (see below) but this has not occurred for many years. Currently (2007), this field is managed with an adjoining improved hay field (outside the SSSI), therefore, the SSSI field tends to be grazed in autumn, winter and spring and rested in the summer months. The notified field is not treated with fertilizer, although some is applied to the adjoining field. Winter stock-feeding occurs in the adjoining field and this may be affecting the SSSI habitat. A spring in the field appears to be the main water supply to the farm house. The central part of the site (Units 6 & 7) to the east of the NNR is currently (2007) under sympathetic management but, in the past, lime and basic slag were applied to the eastern-most enclosures (last in c.1985). The hay meadows, including the field supporting mainly dry grassland in the south-east of the site, were ploughed during the 1939-45 War. The drainage ditches were dug by POWs around this time and were last cleaned out c. 1985. The hay meadows tend to be cut towards the end of July. Some winter stock feeding occurs on drier ground within the SSSI. Unit 8 was planted with alder trees by the Brecon Beacons National Park Authority c.1988. Some of these trees were removed by CCW in 2003 and eventually all will be removed. The eastern-most fields (Unit 9) are grazed throughout the summer mainly by cattle, with varying numbers of sheep at periods throughout the grazing season. There appears to be little or no grazing in winter. According to the owner, the wet pasture used to consist of large tussocks of purple moor-grass, but grazing by cattle over many years has reduced the tussocks. Unit 10 is a small area of wet pasture land crossed by an

	access track and with a pool that provides water for farm stock. In general, the alkaline fen and fen-meadow are considered to be the main focus of management in all the units. Globeflower (the key species on the site) is strongly associated with these habitats and also a field (unit 5) largely comprising a damp form of neutral grassland. Other (non-SAC) forms of marshy grassland, together with neutral grassland and a variety of other habitats types occur as a patchwork across the site and management of the SAC habitats is generally compatible.Globeflower is declining nationally and the population at Cwm Cadlan also seems to have declined since it was notified in 2000. Management in the units where it occurs should aim to maintain or increase the population. Parts of units 5 & 7 are managed for hay and these appear to be the main areas where the species flowers regularly. Until relatively recently, one of the fields in unit 1 supported a reasonable population of globeflower, but this seems to have declined rapidly – formerly this field was periodically cut for hay and the intention is to return to this management regime. Most of the neutral grassland occurs as small areas associated with damper pasture such as fen-meadow, where it occupies areas with more freely draining soils.
HRA/AA Studies undertaken that address this site	HRA Screening of the Rhondda Cynon Taff County Borough Council"s Local Development Plan (2006-2021): January 2010 http://www.rhondda-cynon-taf.gov.uk/en/relateddocuments/publications/developmentplanning/evidencebase/eb18-habitatsregulationsassessmentappropriateass.pdf

Site Name: Llangorse Lake ***Location Grid Ref: SO131262*** ***JNCC Site Code: UK0012985*** ***Size: 215.64 ha*** ***Designation: SAC***	***Habitats Regulations Assessment: Data Proforma***
Site Description	Llangorse Lake is a large shallow lake with a mean depth 2-3 metres lying in a natural depression of the Old Red Sandstone drift formed during the last glacial period. It is the largest natural lowland water in south Wales. It is one of the few natural eutrophic lakes in Britain and is of European importance in this context. The combination of the mineral-rich geology and size and shape of the lake encourages the growth of a wide range of aquatic and marginal plants, including several that are rare in this part of Wales. The site also demonstrates a gradation from open water, with submerged and floating plant beds, through marginal swamp and fen vegetation, marshy grassland to drier unimproved grassland, with patches of willow scrub and wet woodland. The lake also has a diverse plankton community and supports a wide variety of invertebrates, including rare and scarce species.
Qualifying Features	**Annex I habitats that are a primary reason for selection of this site:** ♣ *Natural Eutrophic Lakes with Magnopotamion or Hydrocharition – type vegetation.*
Conservation Objectives	**Vision for the site:** Llangorse Lake is an outstanding natural feature situated towards the head of the Afon Llynfi between the hills of Mynydd Llangorse and Allt yr Esgair. On average, the lake itself covers around 70% of the site and the water levels are allowed to change naturally with changes in rainfall patterns and season. During wetter periods, surrounding land is flooded, which maintains the rich array of habitats transitional between open water and drier ground. These habitats, which include reed beds, sedge fen, wet woodland and wet and dry grasslands, sit sympathetically at the edge of the lake, adding both shelter and diversity. In times of heavy rain the lake also acts as a temporary store for floodwater, slowly releasing it as rain subsides. Water quality is high, inputs of nitrates and other nutrients and sediments from agricultural and domestic sources are under control and the quality and clarity of the water is generally good. The fish population consists of native species such as pike, perch and eels, with populations of bottom-feeding species such as bream at levels that do not affect the aquatic flora. Non-native plant species or fish, such as grass-carp, are absent. The growth of pondweeds is dependent on a variety of factors such as water temperature and turbidity and may vary each year, but in most years there is good growth, with pondweeds with both thin and wide leaves mixing with the delicate leaves of water-milfoils, hornworts and water-crowfoots. Closer still to the lake's edge the water surface is covered in the floating leaves and flowers of water lilies.

	Large parts of the lake margin are fringed by dense beds of common reed and tall sedges and here and there are patches of lesser reedmace, bur-reeds and club-rush. Scattered amongst these beds are uncommon plants such as flowering rush, tubular water dropwort and meadow rue. In mid-summer the striking flowers of purple loosestrife, bog bean and the sweet aroma of water mint add extra interest to the marginal vegetation. Wet woodland dominated by alder and willow and coloured by marsh marigold in the spring extends into the reed beds in many places and forms a bridge between the lake and the land. In a few areas there is damp oak and ash woodland with magnificent veteran trees on the drier fringes of the lake. In other places, marshy grasslands display an array of colourful flowers such as ragged-robin, marsh bedstraw, meadowsweet, greater birds-foot trefoil and orchids. Further up the slopes the land slowly dries and drier neutral grassland becomes the dominant habitat, with common knapweed, bird's-foot trefoil and red clover adding a further dash of colour to the landscape. In the summer, reed and sedge warbler and sometimes Cetti's warbler can be heard singing from the tall marginal vegetation, while hobbies hunt dragonflies and damselflies above. Several pairs of great crested grebes nest amongst the reed beds and on the quieter margins of the lake, waders such as lapwing and curlew display and breed. Towards mid-summer large numbers of mute swans arrive to moult. Insects and other invertebrates abound, and the quiet observer may catch a glimpse of the rare two-tone reed beetle before it drops from the vegetation in an attempt to escape predation. In winter, large rafts of wildfowl such as pochard, tufted duck, goldeneye and coot can be seen drifting on the lake, with more rarely the occasional smew and the pig-like squeals of the secretive water rail may sometimes be heard in the reed beds. During spring, late summer and autumn, migrating birds including terns and waders, and rarities such as the aquatic warbler, stop over to rest and feed. Large numbers of swallows roost in the reed beds. **Annex I habitats that are a primary reason for selection of this site:** ♣ *Natural Eutrophic Lakes with Magnopotamion or Hydrocharition – type vegetation.* The vision for this feature is for it to be in a favourable conservation status, where all of the following conditions are satisfied: ♣ There is no loss of lake area, as defined in 2006 aerial photographs for summer levels. ♣ The aquatic plant community is typical of this lake type in terms of composition and structure, including species such as water-starworts, stoneworts, duckweeds, broad-leaved and fineleaved pondweeds, water lilies, amphibious bistort, water-crowfoots, rigid hornwort, spiked water-milfoil, mare's-tail and horned pondweed. ♣ Plants indicating very high nutrient levels and excessive silt loads are not dominant and invasive non-native water plants do not threaten to out-compete the native flora. ♣ The nutrient, pH and dissolved oxygen levels are typical for a lake of this type and there is no excessive growth

	of cyanobacteria or green algae. ♣ There is a natural hydrological regime. ♣ The natural shoreline is maintained. ♣ The natural and characteristic substrate is maintained. ♣ The natural sediment load maintained. ♣ All factors affecting the achievement of these conditions are under control.
Component SSSIs	The plan area has been divided into management units to enable practical communication about features, objectives, and management. This will also allow us to differentiate between the different designations where necessary. In this plan the management units have been divided into 13 units based on tenure, but also with reference to features and land management requirements.
Key Environmental Conditions (factors that maintain site integrity)	The full restoration of the lake to favourable condition may be difficult to achieve in the short term because of residual nutrients stored within the lake's sediments. However, every effort should be made to restore the structure and functioning of the lake to a favourable, sustainable status, with particular attention being paid to the management of environmental factors which could cause the lake to switch from the plant-dominated to phytoplankton-dominated stable state. The following environmental conditions will be key to achieve this: Water Quality and sedimentation: The quality of the water at Llangorse Lake is very important to the maintenance of its very special plants and animals. The lake sits within a small, predominantly lowland catchment and so receives its water from a very limited area. Water quality is of primary importance to the aquatic macrophyte flora. This naturally eutrophic lake entered an algal-dominated hyper-eutrophic state in the late 1970s, following high nutrient loadings from sewage effluent. These inputs were diverted and the aquatic macrophyte recovery monitored. Recovery has been substantial but there is still the potential for a return to an algal-dominated state. Surveillance of the ecosystem continues. The lake has been slowly recovering from a polluted state and it is vital that this recovery continues. The lake is surrounded by land that is agriculturally productive, with much used as arable or grass ley. It is important that any application of fertilizer (including manure) within the SSSI or lake catchment should be compliant with good agricultural practice, and it is of equal importance to control other inputs from agricultural and domestic sources, so as to avoid excessive levels of nutrients entering watercourses and eventually the lake. It is essential that land in the catchment be carefully managed to avoid sediment run-off, which could cause rapid siltation of the lake. It is therefore important that any land management practices such as ploughing and stock feeding within the SSSI or lake catchment should be compliant with good agricultural practice. Avoiding any exposed soil or mud where it can wash into watercourses entering the lake and keeping a buffer zone of permanent grassland in the lake's flood zone and next to water courses. Any ditches feeding into the lake need to be carefully managed to enable sediments to be trapped rather than enter the lake. CCW will continue to work with partners including the local authority, landowners in the catchment of the lake and the Environment Agency and the Welsh Assembly Government to further the recovery of

	the lake's water quality. Habitat management: The many other habitats around the lake, such as the fen, woodlands and grassland are very important in their own right and often require management. The grasslands should be managed sympathetically, being either cut for hay in early summer and the aftermath grazed by sheep or cattle or lightly grazed throughout the growing season from spring into the early autumn. However, this would need to be carefully managed, so that the marginal vegetation is not damaged and marginal sediments not disturbed by excessive trampling. It may be desirable in places to fence out margins to allow recovery. Much of the woodland surrounding the fringes of the lake adds greatly to the lake's diversity and provides further sheltering opportunities for its wildlife and requires little management. However, should the wet woodlands continue their expansion into the reed beds, non-chemical measures to control it should be employed to prevent losses of the other important habitats. The winter cutting of some reed beds could also be employed to aid the continuation of this fragile habitat and CCW will continue to monitor the situation and instigate management should it be needed.
SAC Condition Assessment	○ *Natural Eutrophic Lakes with Magnopotamion or Hydrocharition – type vegetation* - ***Unfavourable***
Vulnerabilities (includes existing pressures and trends)	Leisure and Recreation: Recreational activities on the lake, fisheries operations and agricultural practice within the catchment are potentially influential. The need for further measures to aid the recovery is being kept under review. Eutrophication: As the small Afon Llynfi is the main outlet for water from the lake, the water flows through the lake very slowly and any pollutants entering the lake will potentially remain there for long periods. Much of the current pollution is in the form of nutrients from the air and the many small watercourses entering the lake. Extra nutrients in a naturally nutrient rich lake dramatically change the types of plants growing in the lake and the number and type of insects that are able to live among the plants. This has a knock-on effect on the fish, birds and mammals of the lake. Increase in sediments: Llangorse Lake sits in a shallow natural basin; the average depth of the lake is only 2-3 metres. The natural processes of erosion from the surrounding hills will naturally reduce the depth of the lake, albeit at a very slow rate, over time, but because of the shallowness of the lake it is exceptionally vulnerable to any extra sediments that may enter the lake from sources other than the natural inputs Impact of wildlife: Possible effects from increasing numbers of Canada geese at the site, which may move nutrients from surrounding land to the water-body, need further investigation.

Landowner/ Management Responsibility	Some units contain quite large areas of semi-improved grassland. These areas have been included to provide a buffer against sediment run-off and nutrient enrichment. ♣ Unit 1 is owned or leased by the BBNPA. ♣ Unit 9 is the crannog - a man-made island and a Scheduled Ancient Monument (SAM). The island supports a few trees and there is a little marginal aquatic vegetation, but the main interest is archaeological. The boundary of the SAM extends beyond the island to include part of the water body and aquatic vegetation. ♣ Unit 11 is common land, which has been developed in connection with recreational use. This is where the main jetties for launching boats are situated. There are also buildings, car parks, tracks and amenity grassland. ♣ Unit 13 is the main body of water, which is a common in its own right. The size of the water body fluctuates and the lake is generally more extensive in the wetter winter months. The lake margin as illustrated on the accompanying map shows the boundary of Unit 13, and represents mean summer level. ♣ In Units 1-8 & 10-12, which are mainly small fields, the SAC habitat is largely confined to the inundation zones (consisting of marginal fen and related habitats) which are flooded during the winter months and during high rainfall periods in summer months. Most of these units also contain habitats including marshy grassland, neutral grassland and woodland, which are not submerged by winter water levels.
HRA/AA Studies undertaken that address this site	HRA Screening of the Brecon Beacons National park Local Development Plan (2007-2022) May 2009 http://www.breconbeacons.org/the-authority/planning/strategy-and-policy/npmp/hra-annexs/hra-main-document-2009/attachment_download/file

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